RGC Ref. No.:
UGC/FDS14/B20/16
(please insert ref. above)

RESEARCH GRANTS COUNCIL
COMPETITIVE RESEARCH FUNDING SCHEMES FOR THE LOCAL SELF-FINANCING DEGREE SECTOR

FACULTY DEVELOPMENT SCHEME (FDS)

Completion Report
(for completed projects only)

Submission Deadlines:	*1. Auditor's report with unspent balance, if any: within **six** months of the approved project completion date.* *2. Completion report: within **12** months of the approved project completion date.*

Part A: The Project and Investigator(s)

1. Project Title

Is the investor-pays model an effective solution to problems in the credit rating industry?

2. Investigator(s) and Academic Department(s) / Unit(s) Involved

Research Team	Name / Post	Unit / Department / Institution
Principal Investigator	Jianfu Shen/Assistant Professor	Department of Economics & Finance The Hang Seng University of Hong Kong
Co-Investigator(s)	Iftekhar Hasan/Chair Professor	Gabelli School of Business/Fordham University
	Giayan Zhang/Professor	College of Business Administration/ University of Missouri-St. Louis
	Pui Han Poon/Associate Professor	Department of Finance & Insurance/Lingnan University
Others		

3. Project Duration

	Original	Revised	Date of RGC / Institution Approval *(must be quoted)*
Project Start Date	2017.01.01	NA	
Project Completion Date	2018.12.31	2019.05.31	2018.12.12

Duration *(in month)*	24	29	2018.12.12
Deadline for Submission of Completion Report	2019.12.31	2020.05.31	2018.12.12

<u>Part B: The Final Report</u>

5. Project Objectives

5.1 Objectives as per original application

1. To expand the understanding of reputational concern and conflict of interest in issuer-pays and investor-pays CRAs
2. To compare and contrast the accuracy and timeliness of issuer-pays ratings and investor-pays ratings using NRSROs
3. To explore the effects of reputational concern and conflict of interest on rating accuracy and rating timeliness
4. To discuss whether the investor-pays model is an effective solution to the problems in the credit rating industry

5.2 Revised objectives

Date of approval from the RGC: NA

Reasons for the change:

1.

2.

3. ....

5.3 Realisation of the objectives
(Maximum 1 page; please state how and to what extent the project objectives have been achieved; give reasons for under-achievements and outline attempts to overcome problems, if any)

The PI and Co-Is have conducted several different projects to achieve the four objectives set forth in the grant proposal. The projects, all in the fields of credit rating and the behaviors of credit rating agencies (CRAs), yielded three conference papers and three journal manuscripts (one was accepted for publication at *Review of Quantitative Finance and Accounting;* one is under review at *Sustainability;* and last one was submitted *to Real Estate Economics*). We also wrote a full manuscript based on one conference paper and expect to submit the manuscript to some journal soon. The four objectives are achieved in these projects.

The first objective is related to the understanding of reputational concern and conflict of interest in issuer-pays and investor-pays CRAs. In the manuscript submitted to *Sustainability*, we show that investor-pays ratings (represented by ratings given by Egan-Jones or EJR) are more likely to be downgraded only in the lower rating grades than issuer-pays ratings (Moody's ratings), which is consistent with the argument that investor-pays agency takes harsher attitude towards the potentially defaulting issuers to acquire reputation. We document that there is also a conflict of interest and reputational concern in the investor-pays CRAs.

For the second objective, we compare the rating accuracy and timeliness of issuer-pays ratings and investor-pays ratings based on the credit ratings given by S&P and Moody's (issuer-pays CRAs) and Egan-Jones (investor-pays CRAs) between 2011 and 2018. We find that the lead-lag relationships of downgrades and upgrades between the S&P (or Moody's) and EJR are bi-directional, indicating that EJR is not timelier than S&P (or Moody's) after 2011. Both EJR and S&P (or Moody's) do not have missed defaults during the sample period. In term of rating timeliness and accuracy, investor-pays CRAs do not have advantage over issuer-pay CRAs even though the issuer-pay CRAs may suffer the conflict of interest with issuers and assign favorable ratings to issuers.

We also explore the impacts of reputational concern and conflict of interest in issuer-pays CRAs on the rating performances (the third objective). We show that the conflict of interest in S&P (or Moody's) does not lead to a higher rating given by S&P (or Moody's) than EJR and the reputational concerns in S&P (or Moody's) do not reduce the rating differences between S&P (or Moody's) and EJR. On the other hand, we find that the investor-pays rating agencies have motives to assign too harsh ratings if they do not have sufficient information on the credit worthiness of the firms. We also show that the rating deflation by EJR does not improve the rating timeliness or rating accuracy but lead to more false warnings, rating volatility and rating reversals.

The findings in our projects show that on the one hand, investor-pays CRAs have their own conflict of interest and give more volatile ratings and false warnings than issuer-pays CRAs; and on the other hand, issuer-pays ratings are as timely as investor-pays ratings after 2011 and the conflict of interest in the issuer-pays CRAs does not cause significant rating differences between issuer-pays ratings and investor-pays ratings. The results suggest that the investor-pays model is not better than issuer-pays model in term of rating timeliness and rating accuracy (the fourth objective). One of our published papers shows that ratings given by issuer-pays CRAs convey valuable information content to capital market and induce some issuers to exert recovery efforts to restore credit worthiness. Issuer-pays ratings still play an important role in the credit rating market and may not be replaced by investor-pays ratings.

5.4 Summary of objectives addressed to date

Objectives *(as per 5.1/5.2 above)*	**Addressed** *(please tick)*	**Percentage Achieved** *(please estimate)*

1. To expand the understanding of reputational concern and conflict of interest in issuer-pays and investor-pays CRAs	✓	100%
2. To compare and contrast the accuracy and timeliness of issuer-pays ratings and investor-pays ratings using NRSROs	✓	100%
3. To explore the effects of reputational concern and conflict of interest on rating accuracy and rating timeliness	✓	100%
4. To discuss whether the investor-pays model is an effective solution to the problems in the credit rating industry	✓	100%

6. Research Outcome

6.1 Major findings and research outcome
(Maximum 1 page; please make reference to Part C where necessary)

Several papers are yielded from this FDS research grant. The major findings and research outcome of each paper are summarized as follows.

1. Paper "Are issuer-pay credit rating agencies better than investor-pay agencies?" (was presented in a conference with the title "Conflict of interest, information uncertainty and rating divergences between issuer-pay and investor-pay ratings")
   - The conflict of interest with issuers does not lead to a higher rating given by S&P/Moody's than EJR (Egan-Jones).
   - If the information uncertainty in a firm is greater, the ratings by EJR are significantly lower than the ratings given by S&P and Moody's.
   - The downward rating bias in the EJR ratings leads to a large likelihood of false warnings.

2. Paper "Detecting conflicts of interest in credit rating changes: A distribution dynamics approach"
   - Investor-pays ratings are more likely to be downgraded only in the lower rating grades than issuer-pays ratings as to acquire reputation.
   - We do not find evidence that issuer-pays CRAs provide favorable treatments to the issuers with threshold ratings due to the alleged conflict of interests with issuers.

3. Conference paper "Can investor-pay rating coverage discipline the issuer-pay credit rating agencies?"
   - The study shows that the issuer-pays ratings become more conservative if the issuers are covered by the EJR.
   - However, if the S&P assigns worse rating than EJR to a firm, the related rating conservatism is not significantly associated with default risk.
   - The rating conservatism instead increases the probability of false warnings (i.e., assign too harsh ratings to issuers that are not defaulting in the subsequent period) and the rating reversals in the S&P ratings.

4. Paper "The roles of rating outlooks: the predictor of creditworthiness and the monitor of recovery efforts"

- We find that rating outlooks (and credit watches) by issuer-pays CRAs have important information content and are significantly associated with creditworthiness.
- By assigning negative outlooks, issuer-pays CRAs induce some issuers to exert recovery efforts to prevent subsequent downgrades.
- Credit rating actions serve as a coordination mechanism between issuer-pays rating agencies and issuers.

5. Paper "The effect of access to the public debt market on corporate financing decisions: The case of REITs"
   - The introduction of credit ratings can reduce information asymmetry and affect REITs' capital structure decisions and the level of cash holdings.
   - After obtaining credit ratings, REITs have significantly increased corporate leverage ratios and the use of long-term debt.

6.2 Potential for further development of the research and the proposed course of action *(Maximum half a page)*

PI will continue to use the rating dataset collected in the projects and complete full manuscripts of some conference papers. One interesting finding from this research is that investor-pays CRAs tend to give lower ratings than issuer-pays CRAs in the speculative grade but higher ratings in the investment grade. PI and Co-Is were discussing the potential reasons behind this and proposed some testable channels to explore the incentives of investor-pays CRAs. It is expected to have some paper to discuss the behaviors of investor-pays CRAs.

7. Layman's Summary

(Describe in layman's language the nature, significance and value of the research project, in no more than 200 words)

Major credit rating agencies (CRAs) have been found to be very slow to downgrade distressed companies such as Enron, WorldCom, Lehman Brothers and others. The distortions of rating accuracy and timeliness may be attributed to the issuer-pays business model that is adopted by most CRAs: the raters are paid by issuers to give ratings. The objective of this research is to compare and contrast rating quality in agencies with issuer-pays model and an alternative model, namely, investor-pays business model, and to evaluate whether investor-pays business model can be an effective solution to the problems in the credit rating industry.

Our research sheds new light on the potential conflict of interest in the investor-pays model, i.e., investor-pays CRAs may give downward biased ratings to issuers when firms are risky and opaque. It shows that after 2011, Egan-Jones (EJR), the only CRA in the US under the investor-pays model, does not give more timely and precise ratings than S&P or Moody's. Rating differences between EJR ratings and S&P/Moody's ratings are not associated with the conflict of interest in the issuer-pays model. Due to frequent rating adjustments, investor-pays CRAs produce more volatile ratings and false warning signals than investor-pays CRAs.

Part C: Research Output

8. Peer-Reviewed Journal Publication(s) Arising Directly From This Research Project

(Please attach a copy of the publication and/or the letter of acceptance if not yet submitted in the previous progress report(s). All listed publications must acknowledge RGC's funding support by quoting the specific grant reference.)

The Latest Status of Publications				Author(s) *(denote the correspond-ing author with an asterisk*)*	Title and Journal / Book *(with the volume, pages and other necessary publishing details specified)*	Submitted to RGC *(indicate the year ending of the relevant progress report)*	Attached to this Report *(Yes or No)*	Acknowledged the Support of RGC *(Yes or No)*	Accessible from the Institutional Repository *(Yes or No)*
Year of Publication	Year of Acceptance *(For paper accepted but not yet published)*	Under Review	Under Preparation *(optional)*						
2020				Winnie P. H. Poon, Jianfu Shen*	The roles of rating outlooks: the predictor of credit worthiness and the monitor of recovery efforts, *Review of Quantitative Finance and Accounting*, https://doi.org/10.1007/s11156-019-00868-7	2018	Yes (Annex I)	Yes	Yes
		Yes		Wai Choi Lee, Jianfu Shen*, Tsun Se Cheong	Detecting conflicts of interest in credit rating changes: A distribution dynamics approach, *Sustainability*	No	Yes (Annex II)	Yes	No
		Yes		Jianfu Shen*, KW Chau	The effect of access to the public debt market on corporate financing decisions: The case of REITs	2018	Yes (Annex III)	Yes	No
			√	Iftekhar Hasan, Winnie P. H. Poon, Jianfu Shen, Gaiyan Zhang	Are issuer-pay credit rating agencies better than investor-pay agencies?	No	Yes (Annex IV)	Yes	No

9. Recognized International Conference(s) In Which Paper(s) Related To This Research Project Was / Were Delivered

(Please attach a copy of each conference abstract)

Month / Year / Place	Title	Conference Name	Submitted to RGC *(indicate the year ending of the relevant progress report)*	Attached to this Report *(Yes or No)*	Acknowledged the Support of RGC *(Yes or No)*	Accessible from the Institutional Repository *(Yes or No)*
April/ 2019/ Hong Kong	Can investor-pay rating coverage discipline the issuer-pay credit rating agencies?	2019 3rd International Conference on Economics, Finance and Statistics	N/A	Yes (Annex V)	Yes	Yes
May/ 2019/ Japan	Conflict of interest, information uncertainty and rating divergences between issuer-pay and investor-pay ratings	the 7th International Conference on Social Science and Management (ICSSAM 2019)	N/A	Yes (Annex VI)	Yes	Yes
August/ 2019/ Japan	A comparative study on credit-rating adjustment produced by investor-paid agency and issuer-paid agency: An innovative approach of distribution dynamics	International Conference on Industry, Business and Social Sciences	N/A	Yes (Annex VII)	Yes	Yes

10. Whether Research Experience And New Knowledge Has Been Transferred / Has Contributed To Teaching And Learning
(Please elaborate)

One of the RAs for this project (Kwokyuen Fan) has recently be admitted to PhD program at the Hong Kong Polytechnic University.

11. Student(s) Trained
(Please attach a copy of the title page of the thesis)

Name	Degree Registered for	Date of Registration	Date of Thesis Submission / Graduation
Nil			

12. Other Impact

(e.g. award of patents or prizes, collaboration with other research institutions, technology transfer, teaching enhancement, etc.)

Some papers from this project were completed in collaboration with Professor Iftekhar Hasan at Fordham University and Professor Gaiyan Zhang at University of Missouri-St. Louis.

13. Statistics on Research Outputs

	Peer-reviewed Journal Publications	**Conference Papers**	**Scholarly Books, Monographs and Chapters**	**Patents Awarded**	**Other Research Outputs (please specify)**	
No. of outputs arising directly from this research project	1 (accepted) 2 (under review) 1 (under preparation)	3	0	0	Type	No.

14. Public Access Of Completion Report
(Please specify the information, if any, that cannot be provided for public access and give the reasons.)

Information that Cannot Be Provided for Public Access	**Reasons**
Nil	