

Advisor's Report on Dissertation Thesis

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Title of the Thesis:	Three Essays on Bank-Sourced Credit Risk Estimates
Type of Defense:	DEFENSE
Date of Pre-Defense	February 17, 2021

Address the following questions in your report, please:

- a) Can you recognize an original contribution of the author?
- b) Is the thesis based on relevant references?
- c) Is the thesis defensible at your home institution or another respected institution where you gave lectures?
- d) Do the results of the thesis allow their publication in a respected economic journal?
- e) Are there any additional major comments on what should be improved?
- f) What is your overall assessment of the thesis? (a) I recommend the thesis for defense without substantial changes, (b) the thesis can be defended after revision indicated in my comments, (c) not-defensible in this form.

(Note: The report should be at least 2 pages long.)

- a) Can you recognize an original contribution of the author?

Yes, I can. The thesis is formed of three interconnected papers and each of them delivers an interesting contribution to the internal credit risk research. The contribution builds on a unique dataset as credit risk data sources are rather limited so that most studies have to rely on the rating agencies (S&P, Moody's, Fitch). However, the rating agencies and their published data certainly showed their limitations and questionable reliability and validity during the global financial crisis a decade ago. The thesis builds on data from Credit Benchmark that collects internal credit risk estimates at the entity level from IRB banks globally (EU, USA, UK, Canada, South Africa and Asia-Pacific region) and aggregates it to entity- and portfolio-level credit risk benchmarks. Utilizing this unique dataset makes the contribution in a way by itself but the specific papers certainly have contributions above the baseline of "using interesting dataset".

The first two papers study the credit transition matrices (CTMs) with the use of this unique dataset. An alternative approach towards CTM estimation is proposed through aggregation of internal credit risk estimates pooled from a set of banks leading to more accurate estimates (compared to the ones based on credit rating agencies, CRAs). The first paper tests the standardly used assumptions of time homogeneity and Markovian property and shows that the properties are not satisfied and it turns out that the banks tend to revert their past rating actions. This paper has been accepted for publication in Journal of Credit Risk. The second paper

investigates how much the bank-sourced CTMS depend on the specifics of the underlying credit risk datasets and their aggregation. Transition rates and VaRs are studied for three different types of aggregations, these are then also compared with the CRAs' estimates. In addition, industry-specific CTMs are constructed, pointing towards industry-specific credit cycles. As all these findings are novel and had not been presented in the literature before, the second paper was published in very high-profile European Journal of Operational Research.

The last paper builds on the findings of the second paper that shower quite dispersed results of different approaches towards aggregation and dataset selection. As banks are allowed to implement quite a wide range of rating strategies (even though regulated), their reported credit risks could be very hardly comparable. The results utilizing the original dataset show an intuitive negative relationship between credit risk variance and knowledge about the assessed entity. Industry and location play also an important role in the variance level. This last paper was published in the IES Working Papers series in 2020.

b) Is the thesis based on relevant references?

Yes, the thesis builds on the current topical literature. The separate papers cover the range as well. I see no important papers missing.

c) Is the thesis defensible at your home institution or another respected institution where you gave lectures?

As my home institution is IES FSV UK, I am sure the thesis meets the criteria necessary for a successful defense.


d) Do the results of the thesis allow their publication in a respected economic journal?

The first two papers are already published. The publication in EJOR is certainly an accomplishment worth a special note here.

e) Are there any additional major comments on what should be improved?

What is your overall assessment of the thesis? (a) I recommend the thesis for defense without substantial changes, (b) the thesis can be defended after revision indicated in my comments, (c) not-defensible in this form.

I gladly recommend the thesis for defense without substantial changes (a), all comments (practically all minor ones) from pre-defense have been sufficiently addressed. I would also like to stress here that Barbora has worked on the papers very independently with only little help from my side during final readings of the manuscripts.

Date:	22. 4. 2021	
Advisor's Signature:		
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