

Advisor's Report on Dissertation Thesis

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Title of the Thesis:	Three Essays on Financial Development
Type of Defense:	DEFENSE
Date of Pre-Defense	February 26, 2020

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.)

The dissertation thesis of Jan Mares focuses on financial development. It consists of three chapters analyzing important aspects of financial development, and it uses a unifying Bayesian econometric framework. I will largely repeat my words from my pre-defense report but let me add that I have also seen Jan's written reaction to the referee letters and I am satisfied with the way Jan addressed these comments.

I have known Jan Mares for several years, already from the times of his studies in our M.A. degree program. I consider him an excellent candidate with international research exposure and excellent knowledge of macroeconomic policy issues.

The thesis consists of three chapters. Two chapters are already published in a journal (the one is published, and the second one is forthcoming at the time of writing this report). The third chapter is unpublished. The doctoral thesis is empirical but well-grounded in economic theory.

The first chapter deals with the traditional topic of finance and growth interactions. It confirms previous studies in showing that finance matters for economic growth, i.e., that financial development is vital for progress. However, the chapter extends previous literature in many dimensions. First, it examines the issue of which type of finance matters for economic growth. Previous literature has largely focused on the examination of selected indicators of financial development such as the credit to GDP ratio or credit growth (i.e., mostly the financial depth

indicators). However, it is well-known that financial development is multidimensional and financial development goes beyond financial depth. Therefore, it is worthwhile also to examine indicators representing the financial stability, access to finance and efficiency of financial intermediaries. This chapter addresses exactly this issue and finds that the efficiency of financial intermediaries is crucial for growth. An important message of this chapter is that it is the quality rather than the quantity of finance, which matters for long-term growth. The chapter uses several decades of data and it focuses on a global sample of countries.

However, examining the type of finance is not the only contribution of this chapter. The finance-growth literature, like many other macroeconomic pieces of literature, suffers from what is known as the regression model uncertainty. This is because there are typically several competing theories suggesting different regression specifications. The regression model uncertainty can be addressed in various ways. Jan chooses one well-established method, namely the Bayesian model averaging. Note that this method is used also in the remaining chapters of this thesis. Using the Bayesian model averaging, the author is able to find which variables are robustly related to the dependent variable and importantly, she or he can consider nearly dozens of explanatory variables jointly. Therefore, the results presented in this chapter are robust to model uncertainty, which is an issue that has not been examined in finance-growth literature before.

The first chapter is published in the *World Bank Economic Review*. This is a very solid, highly selective field journal (with impact factor) with very high rejection rates, and it features major research on development economics. The chapter is co-authored by Iftekhar Hasan (Fordham University) and me. I want to emphasize that Jan has served in this chapter as a very valuable co-author rather than a research assistant.

The second chapter focuses on the implications of financial development for wealth inequality. The wealth inequality has become an issue of primary policy importance recently. There is a heated discussion of wealth inequality trends, especially concerning its increases in developed countries. Despite its enormous importance, there is very little evidence regarding wealth inequality and the existing empirical literature is concerned with the measurement of wealth inequality rather than with examining the determinants of wealth inequality. This chapter takes a step forward and provides one of the first analysis (if not the first) of cross-country determinants of wealth inequality. Again, the characteristic feature of this chapter is an application of Bayesian model averaging. Using this econometric technique, the author can address the regression model uncertainty and examine a large number of potential determinants of wealth inequality.

The results in this chapter reveal an interesting pattern. Among the top determinants of cross-country wealth inequality, there are many indicators capturing financial development. Therefore, the results suggest that finance matters for wealth inequality. The results also show that the quantity of finance increases wealth inequality but, to the contrary, the quality of finance decreases it. However, the chapter also evaluates the overall effect of financial development indicators on wealth inequality and finds that the quality indicators dominate, i.e. financial development helps reduce the effect.

The article based on this chapter has been recently accepted for publication in the *Journal of International Money and Finance*. This is a very solid field journal (with impact factor). The chapter is co-authored by Iftekhar Hasan (Fordham University) and me. Again, I must

emphasize that Jan has been instrumental in this research and has contributed more than fully to this paper.

Finally, Jan provides a third chapter, which narrows down the previous chapter to examine a specific aspect of wealth inequality, namely income inequality. There have been already some research evaluating the effect of financial development on income inequality, but this chapter addresses the model uncertainty and therefore, evaluates if the previous results are indeed robust. There are several other contributions in this chapter such as examination of wider arrays of financial development indicators than previous research. Interestingly, this chapter provides the same story as the previous chapter. Not only it finds that finance reduces inequality but at the same time it shows that the quality of finance matters the most.

The chapter uses a more elaborate econometric approach. While two previous chapters used the Bayesian model averaging applied to the cross-sectional data, this chapter employs the panel data. Finally, let me note that this chapter is solo-authored. I have no doubts that this chapter will be published in a good field journal, too.

Let me provide some concluding general remarks regarding the doctoral thesis. The econometric models applied in this doctoral thesis follow the state-of-the-art in the area of Bayesian model averaging. All appropriate tests have been conducted and appropriate prior structures have been selected. The thesis is well-written and very easy to follow, the high quality of the thesis is not only obvious from reading the thesis. But it is also supported in the journal publications, namely in two premier journals: World Bank Economic Review, and Journal of International Money and Finance.

All in all, I find the dissertation a very valuable piece of empirical work on financial development. The thesis addresses a timely issue of (wealth and income) inequalities and shows that financial development is an important factor driving the inequalities around the globe. I fully recommend it for defense.

Date:	July 30, 2020
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