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Prof. zw. dr hab. Wiesława Przybylska-Kapuścińska

Wyższa Szkoła Bankowa w Poznaniu

Instytut Finansów

Review of the PhD thesis of Hernán Alzate

entitled „Cross-Boarder Financial Spillovers and the Risk-Taking Channel Response", written under the supervision of Prof. dr hab. Anna Zielińska-Głębocka in the Chair of Economics of European Integration of the Faculty of Economics at the University of Gdańsk.

1. The basis of the review

The basis for the review is the Dean's letter Dr hab. Monika Bąk (the 2 July 2019) entrusting me the duty of the reviewer of the science achievements and PhD dissertation of Hernán Alzate, MA.

2. PhD Candidate's scientific achievements

PhD dissertation submitted by Hernán Alzate, MA consists of five chapters and concerns macroprudential policies and spillover effects for 33 countries. The research issues undertaken in the dissertation are coherent. Monetary and macroprudential policies' issues raised in the work are substantively and logically related. The dissertation is prepared in English. The list of publications submitted with the thesis consists of one article published in ranked journal (Contemporary Economy) and one non-published paper prepared in co-authorship (master thesis).

The subject of the PhD dissertation concerns interesting and current topic. The PhD Candidate set himself ambitious goals, which he partially achieved using properly selected tools and justifying obtained results. Research questions regarding the impact of macroprudential policies on the spillover effects cover a relatively wide area – from micro- to macroeconomic perspective. The discussion conducted by Hernán Alzate, MA is based on well prepared theoretical foundation and well-thought-out research. The dissertation has a great applicative importance due to analysis of the spillovers from monetary policy and macroprudential policy adopted in Advanced Economies to emerging markets.

Macroprudential policies have been widely discussed in literature after the subprime crisis, especially when monetary policy transmission mechanisms and its non-standard tools gained particular importance. Monetary policy rules in Advanced Economies during and after the crisis had an impact on emerging markets that is why so-called spillover effects became the subject of lively academic discussion. The analysis of credit channel in the transmission of shocks undertaken by PhD Candidate makes it so important and current according to the literature on financial stability.

The PhD thesis consists of qualitative and quantitative research. The qualitative part (chapter 1 and 2) is based on well-chosen literature review and covers relatively wide research area indicating macroprudential policy and its tools as well as institutional models being used and financial cycles theory. This part also refers to monetary policy and macroprudential policy interactions. Second part of the qualitative analysis is a review of empirical studies on policy spillovers. The theoretical foundation presented in qualitative part of the thesis is a well-prepared introduction to the quantitative analysis and proves Author's broad knowledge of the presented topic and ability to conduct a research that deserves doctoral degree.

The quantitative part of the thesis is introduced by the presentation of the Author's research on the countries selected for the main analysis in chapter 5. It is followed by the Global VAR Modelling scheme and its application to the selected countries.

The subject of the PhD dissertation and research questions are original and innovative and can be identified as a part of the current academic research conducted Worldwide. The research tasks undertaken by the PhD Candidate confirm his analytical and workshop skills. They required broad knowledge of banking, monetary policy and transmission mechanisms as well as extensive quantitative and qualitative analysis. In the reviewed dissertation MA Hernán Alzate has fully demonstrated his knowledge and skills, and the results obtained should be considered mature and creative.

3. Characteristics of the PhD thesis „Cross-Border Financial Spillovers and the Risk-Taking Channel Response"

In the PhD dissertation submitted by MA Hernán Alzate, due to the function of reviewer, I should indicate the lack of the research procedure, its stages and justification of linking the chapters. In addition to presenting the research procedure, it would be also useful to present a diagram of research questions and connection of various stages of the analysis as

a kind of a guide to the doctoral thesis. As a more general comments, I should also point out the lack of list of abbreviations, that are being used inconsistently in the thesis.

The dissertation is divided into three parts, of which first is theoretical, second presents the methodology and third is a research, that altogether present a justified sequence.

Theoretical foundation in chapters 1 and 2 presents macroprudential policy and its tools as well as interactions between monetary policy and macroprudential policy. Subchapter about financial stability and financial cycles is a good introduction to actual research presented in the last chapter. Second chapter is devoted to financial spillovers. Both chapters can be considered as literature review, as there are not many Author's comments.

Chapter three and four are an introduction to the main research and they present the methodology and data used by the Author in the research. The third chapter presents the analysis of the countries selected for the research. Every subchapter is devoted to one issue that is used in the model, like credit, bank lending conditions and monetary policy.

Fourth chapter is a presentation of methodology used in the research, that is Global VAR Modelling and the data used in the original model. Within the discussion there is a relatively broad presentation of the literature on GVAR Modelling and results obtained for different sets of data. This can be interpreted as a good starting point for the Author's own research and discussion.

Last chapter presents the use of the model for selected set of economies. Unfortunately, there is little Author's own comments on the obtained results.

4. Presentation and critical analysis of the PhD dissertation

The aim of the PhD dissertation is to analyze financial spillovers among selected group of 33 countries. According to the hypothesis (H1) to be verified the direction of such spillovers is from Advanced Economies to emerging markets. Second hypothesis concerns the credit channel and extent of the spillovers in emerging markets. The thesis uses both qualitative and quantitative analysis in order to verify stated hypothesis.

Chapter one presents overall knowledge on macroprudential policy and its tools. There is relatively broad literature review on that matter, but the chapter lacks Author's own comments on presented research and results obtained in literature. The subchapter on monetary policy and macroprudential policy interactions as well as financial cycles presentation should be appreciated and they prove Autor's well prepared theoretical foundation of the research, but unfortunately they are insufficiently extended in order to

present the scope of the matter – like for example subchapter about monetary policy and macroprudential tools (1.3.6), which mentions the matter rather than discuss it. It should be also pointed out that at some point the chapter is messy as macroprudential tools are presented in two subchapters – at the beginning and at the end of the chapter. The Author also uses imprecise terms like "banks with better capital" or "credit-taking channel".

Second chapter is devoted to literature review on financial spillovers and should be a part of the first chapter in my opinion. There is an interesting project presented in the chapter – The International Banking Research Network initiative – on spillover effects, bank-lending channels and prudential policies, which is important according the thesis subject, but it is more like a review with little Author's own comments on mentioned issues. I would also suggest a broader analysis of the macroeconomic announcements, just to mention the spillover effects in other areas like stock exchange (e.g. Będowska-Sójka B. research). In this chapter Author tends to use imprecise terms as well – that is terms like "global pacts" (p. 41) or "banks bear huge lending risk than usual" (p. 37).

The analysis on selected countries is presented in chapter three. It is relatively broad, but the graphs concern only a part of the countries and obtained results are not properly discussed. The comments in this chapter are limited to explanation of the data in the figures and tables and in some cases are not precise enough (e.g. insufficient explanation to figure 8, no explanation to figure 10). It should be mentioned that some of the figures are unreadable because of the lack of colors in the printed copy.

The methodology used in the research is presented in chapter four. There is a relatively broad discussion on models and theories based on Global VAR Modelling scheme (GVAR), but it lacks extended presentation on each author's model modifications and other methods used to analyze financial spillovers (e.g. Mokrzycka J. Bayesian t-Copula-GARCH models, Kliber A. research on the matter as well as Burzała M. research). The presentation of GVAR itself is very simple. It does not explain all of the variables presented in the formulas and there are some mistakes given the variable indexes. The language used in the chapter is imprecise – e.g. "US shocks are more relevant" (p. 68) but the Author does not explain than what, there are also colloquial phrases like "mitigate banking system collapse" (p. 64). What is more important the works cited in the chapter are not listed in bibliography, especially the ones from Pesaran (2004 and 2007) which can be identified as ones that Author relies on the most in his own research. Complete list of the works cited in the research is given in part six of the review.

Last chapter presents the stages of the research and obtained econometric results. The model of each economy is based on eight variables (table 12) which in my opinion is over simplification according to the goals of the analysis – micro and macro analysis of the spillover effects (e.g. compare the models used by Welfe A.). Author states that main contribution of the dissertation is the WMAT2 variable added to the GVAR, but he does not clearly explain how it is calculated (compare explanation of WMAT2 on page 75 and 87) and how it influences the model. There are many gaps in the presented method – for example Author does not explain how some variables are converted into US dollars. What is more it is hard to distinguish what is Author's own work and what is taken from the original Global VAR Modelling handbook. The research itself presented in chapter 5 is rather a case study.

According to the data preparation for the model, some of the variables reject the hypothesis and to my understanding should not be used in the model, but there is no explanation in the text what Author actually does in that cases (e.g. 12.6% of variables with serial autocorrelation, US Cps variable). The data is not tested for correlation between variables what should be done for VAR models. The R^2 for the estimated models is relatively low (60%) and Author identifies it as a measure for the selected variables, not for the model, which is a mistake (table 17). What is more the models estimated in the research are not presented in the text, so it is hard to verify the correctness of the calculations. The presentation of the models is limited to description with no additional discussion of the results obtained. Author states that there is no structural change in the data (5.10) which is hard to agree with according to the analyzed period (1994-2016) and there are no calculations presented which makes it impossible to verify this argument. Variables presented in the tables 19 and 20 do have in some cases the errors as high as 6388.28% (WMAT1 and WMAT2) which is not consistent with stated assumptions that it has to sum up to 1 (chapter 4, p. 69). The problem with introduction of WMAT2 in this case is that Author did not carry out the analysis on impact of this variable on the model. This may also be the cause of impulse response functions not dispersing, which suggest that re-estimation should be conducted. It is not clear what Author means in tables 19 and 20 – forecasts before and after validating statistical tests.

To sum up, the research presented in the dissertation should be considered properly designed and well embedded in the literature.

5. Advantaged of PhD dissertation - synthesis

Thesis presented by MA Hernán Alzate brings interesting research on spillover effects, especially in context of emerging markets. Summarizing partial assessments, the strengths of the submitted thesis are:

1. The reviewed PhD dissertation can be considered as a part of the current research on macroprudential policy and spillover effects. The research is **distinctive and original**.

2. The **value added by quantitative research** should also be strongly emphasized due to the broad data used in the research.

3. The research carried out also has **advantages of novelty**, due to the construction of the variables.

4. It is worth emphasizing the importance of the submitted dissertation for both theory and practice.

6. Comments

In the PhD dissertation submitted by MA Hernán Alzate, due to the function of reviewer, I should indicate some of the weaknesses. The language used in the thesis is very often imprecise. There is no list of abbreviations in the introduction, which could help to identify what is mentioned in the text. Some paragraphs are as short as two sentences which makes it impossible to exhaust the issues (e.g. 4.2.8). There is no source given for some tables (e.g. tables 14 to 20). Some abbreviations are not explained. Many publications cited in the text are not mentioned in the bibliography (in order of appearance):

1. Gross and Kok 2013.
2. Cesa-Bianchi 2014.
3. Georgiadis and Mehl 2014.
4. Casstren et al. 2010.
5. Alessandri et al. 2009.
6. Gray et al. 2013.
7. Chudik and Fratzscher 2011.
8. Dovern and van Roye 2013.
9. Dées et al. 2007.
10. Pesaran et al. 2004 and 2007.
11. Galesi and Lombardi 2009.
12. Anderton et al. 2010.

13. Bussiére et al. 2012.

14. Battendorf 2012.

15. Marc et al. 2014.

16. Chudik and Smith 2013.

17. Dées and Saint-Guillem 2011.

18. Favero 2011.

19. Hebous and Zimmermann 2013.

20. Georgiadis 2014a and 2015.

21. Feldkircher and Huber 2014.

22. Eickmeier and Ng 2011.

23. Xu 2012.

24. Konstantakis and Michaelides 2014.

7. Conclusion

In the submitted dissertation MA Hernán Alzate proved his predisposition to conduct research work independently. The Candidate undertook the original and interesting problem of spillover effects. He solved the research tasks in an original way. He proved a broad theoretical knowledge, good knowledge of the literature and proper research workshop.

Through the conclusions formulated at each stage of the research, MA Hernán Alzate proved his preparation for conducting the research. The conclusions contribute to theory and practice. The applicative significance of the results obtained is primarily due to the data used in the research and the problem construction. There are some weaknesses mentioned in paragraphs 4 and 6.

Bearing in mind the above opinions, I find that dissertation of MA Hernán Alzate meets the borderline requirements specified in Act of 14 March 2003 (Journal of Laws of 2017, item 1789) with degrees and academic title. I am asking for the admission of MA Hernán Alzate to the further stages of the doctoral thesis.

Wiesława Przybylska-Kapuścińska