

Summary of scientific accomplishments

1. Introduction

The aim of this summary is to present my scientific accomplishments since obtaining the Ph.D. degree in economics in 2007. The rest of this text is structured as follows. In section two I discuss the course of my academic and professional career as well as sketch my main research areas. Section three discusses my single-topic series of publications that forms the basis for my application for a habilitation degree in economics. In section four I characterize my other major publications. Section five evaluates my scientific achievements using a standard set of indicators and discusses my other research and teaching activities.

2. Scientific and professional career

The beginnings of my scientific career go back to the last year of my master studies at the Warsaw School of Economics, where I was an intern at the Institute of Econometrics during the academic year 2001/2002. In 2002 I joined the Department of Macroeconomic and Structural Analyses (currently: Economic Institute) at the National Bank of Poland and started my Ph.D. studies at the College of Economic Analyses of the WSE. In 2007 I defended my Ph.D. dissertation *Determinants of economic growth in Poland: technology transfer and absorptive capacity*, and in 2009 I was appointed assistant professor in the Department of Theoretical and Applied Economics of the WSE.

Until obtaining my Ph.D. degree, my research interests, pursued both at the WSE and NBP, were focused on the theory and empirics of economic growth, including i.a. real convergence, determinants of technological change and impact of foreign direct investment on productivity growth. Afterwards, my main research areas started to be dominated by business cycle analysis, stabilization policy issues and macroeconomic forecasting, mainly using dynamic general equilibrium models.

Apart from scientific research, my work at the NBP also involved analytical and modeling projects, the aim of which was to directly support monetary policy making. An important example of this kind of activities was my participation at constructing the macroeconomic model of the Polish economy ECMOD (Fic, Kolasa, Kot, Murawski, Rubaszek and Tarnicka, 2005), as well as its follower NECMOD (Budnik, Greszta, Hulej, Kolasa, Murawski, Rot,

Rybaczyk and Tarnicka, 2009). The latter is still used as the NBP's main model to generate regular macroeconomic projections published in the Inflation Reports. I participated in preparing these projections from 2005 to 2007 and in 2011 I supervised them as acting Deputy Director General of the Economic Institute at the NBP. From 2004 to 2009 my employment at the NBP was interrupted three times by several-month visits at the European Central Bank, where I carried out my research projects and did some analytical work.

My teaching activity at the WSE involves mainly giving lectures at bachelor and master levels in microeconomics, macroeconomics, theory of economic growth and macroeconomic modeling. These courses are often taught in English.

3. Single-topic series of publications

My research carried out after defending my Ph.D. dissertation resulted in a series of papers titled *Applying dynamic general equilibrium models to business cycle analysis*. These works constitute my single-topic series of publications as understood by the bill of 14 March 2003 on scientific degrees and titles and on degrees and titles in arts (art. 16., par. 2). These are the following nine publications:¹

- *Business cycles in EU new member states: How and why are they different?* – article accepted for publication in *Journal of Macroeconomics* (Kolasa, 2013a); earlier version appeared as NBP Working Paper (Kolasa, 2013b)
- *Financial frictions and optimal monetary policy in an open economy* – article accepted for publication in *International Journal of Central Banking* (Kolasa and Lombardo, 2013); earlier versions appeared as ECB Working Paper (Kolasa and Lombardo, 2011a) and NBP Working Paper (Kolasa and Lombardo, 2011b)
- *Bayesian evaluation of DSGE models with financial frictions* – article published in *Journal of Money, Credit and Banking* (Brzoza-Brzezina and Kolasa, 2013); earlier version appeared as NBP Working Paper (Brzoza-Brzezina and Kolasa, 2012)
- *The anatomy of standard DSGE models with financial frictions* – article published in *Journal of Economic Dynamics and Control* (Brzoza-Brzezina, Kolasa and Makarski, 2013a); earlier version appeared as NBP Working Paper (Brzoza-Brzezina, Kolasa and Makarski, 2011)
- *Macropprudential policy instruments and economic imbalances in the euro area* – article published as ECB Working Paper Series (Brzoza-Brzezina, Kolasa and Makarski, 2013b); earlier version appeared as NBP Working Paper (Brzoza-Brzezina, Kolasa and Makarski, 2013c)

¹ Some of my research project were carried out with co-authors. Details on the individual contributions are presented in Annex 5.

- *Putting the New Keynesian DSGE model to the real-time forecasting test* – article published in *Journal of Money, Credit and Banking* (Kolasa, Rubaszek and Skrzypczyński, 2012); earlier version appeared as ECB Working Paper (Kolasa, Rubaszek and Skrzypczyński, 2009)
- *Can we prevent boom-bust cycles during euro area accession?* – article published as ECB Working Paper (Brzoza-Brzezina, Jacquinot and Kolasa, 2010a); earlier version appeared as NBP Working Paper (Brzoza-Brzezina, Jacquinot and Kolasa, 2010b)
- *Real convergence and its illusions* – article published as ECB Working Paper (Kolasa, 2010a)
- *Structural heterogeneity or asymmetric shocks? Poland and the euro area through the lens of a two-country DSGE model* – article published in *Economic Modelling* (Kolasa, 2009); earlier version appeared as NBP Working Paper (Kolasa, 2008a)

The papers listed above cover the following, partly overlapping research problems, to examine which I used dynamic general equilibrium models:

- sources of business cycle asynchronization,
- stabilization policy in a heterogeneous monetary union,
- business cycle forecasting,
- impact of financial frictions on business cycle.

This topical division will also be used to summarize the main results obtained in the above mentioned papers.

3.1 Sources of business cycle asynchronization

My first attempt to business cycle analysis was a paper published eventually in 2009 (Kolasa, 2009). In this paper, I developed a two-country dynamic stochastic general equilibrium (DSGE) model for Poland and the euro area. It was one of the first models of this type estimated with Polish data. The estimation was done using Bayesian methods, popularized in this class of frameworks by Smets and Wouters (2003). An important feature of the model was a detailed description of trade relationships between Poland and the euro area, including home bias in preferences, presence of nontradable goods and costs of distributing tradable goods.

The obtained results allowed me to compare the responses of the Polish and euro area economy to typical disturbances, including productivity in sectors producing tradable, nontradable and investment goods, household preferences as well as fiscal and monetary policy. I also estimated the role of individual shocks in accounting for business cycle fluctuations in both regions.

One of the conclusions that could be drawn from these analyses was some degree of similarity between the business cycles in Poland and the euro area. Both economies turned out to react similarly to the same type of shocks. Moreover, the estimated contribution of individual disturbances to economic fluctuations was similar, except that, obviously, shocks originating in the euro area had much more impact on the Polish economy than the other way round.

However, the most important contribution of this paper to the literature was delivering a formal test of sources of heterogeneity between Poland and the euro area. I did it by comparing the marginal likelihood for different model variants, including those assuming equality of parameters across both economic regions. The obtained results allowed me to state that while there is no conclusive evidence of heterogeneity in deep model parameters (i.e. those describing technology, household preferences or real and nominal rigidities), the properties of stochastic shocks do differ significantly between Poland and the euro area. In particular, shocks originating in the Polish economy are more volatile and relatively little correlated with their euro area counterparts.

Business cycle synchronization analysis was also the aim of my next article (Kolasa, 2013a). In this project I used the business cycle accounting (BCA) framework developed by Chari, Kehoe and McGrattan (2007). The BCA setup is based on a standard real business cycle model, in which economic fluctuations are driven by movements in four wedges corresponding to: efficiency of factor utilization, distortions of intratemporal (leisure vs. consumption) and intertemporal (current vs. future consumption) decisions, and exogenous spending (including government purchases and foreign trade).

Originally, the BCA framework was used to direct the macroeconomic modeling development to setups that mimic well those business cycle characteristics that can be identified with this method. The novelty of my article was to use this approach to analyze business cycle synchronization between various economies. Its main advantage compared e.g. to my previous analysis based on a fully specified DSGE model (Kolasa, 2009) was more generality and hence some robustness to misspecification, while preserving the flavour of a fully structural framework. The cost is some loss in precision in the formulated conclusions as the wedges identified with the BCA are a mixture (though still interpretable) of various shocks and frictions present in real economic systems.

This time my empirical analysis was not restricted to Poland, but also included other Central and Eastern European (CEE) countries: the Czech Republic, Slovakia, Slovenia and Hungary. The main result was identification of the intra- and intertemporal wedges as the main source of the residual asynchronization of business cycles between the CEE region and the euro area. These two wedges were also found to account for a much larger share of fluctuations in the former group of countries.

These findings offer at least two interesting interpretations. First, while the main shocks driving the business cycles in both regions translate into similar fluctuations in the efficiency of factor utilization (the efficiency wedges are highly synchronized between the CEE countries and the euro area), their transmission through labor and capital markets is different. Second, a high role of the intratemporal wedge suggests that the costs of business cycle fluctuations in the CEE region are larger than in the euro area, and hence the case for stabilization policy is stronger (see Gali, Gertler and Lopez-Salido, 2007).

3.2 Stabilization policy in a heterogeneous monetary union

The standard optimal currency area theory (Mundell, 1961; Alesina and Barro, 2002) points at business cycle synchronization as one of the key criteria determining the costs of losing monetary autonomy. This means that the conclusions presented in the previous section, although mainly positive, are highly relevant in the context of functioning and expanding the euro area. The papers discussed in this section supplement this analysis with a normative dimension by highlighting the role of monetary regimes or examining efficiency of various policy instruments used to prevent imbalances that may arise after losing monetary independence.

In my first analysis in this research field (Kolasa, 2010a) I investigated the dynamics of real convergence processes in a small open member of a currency union. As a tool I used a large four-country dynamic general equilibrium model EAGLE (Gomes, Jacquinot and Pisani, 2012), which I modified and recalibrated such that it includes linkages between Spain (which was the main focus of the analysis) and the rest of the euro area, the US, and the rest of the world.

This model was next applied to generate two real convergence scenarios between Spain and the rest of the euro area, concerning tradable or nontradable sector productivity. Additionally, I considered four scenarios (two for each tradable and nontradable sectors) based on false expectations related to future productivity developments. The first of them was defined as confusing by the economic agents a temporary productivity increase with a permanent one, while the second assumed unfulfilled expectations about future acceleration in productivity. Each simulation was run assuming either flexible or fixed exchange rate between Spain and the rest of the euro area.

One of the obtained results was illustration that real convergence processes may lead to big swings in the main macroaggregates, even though the underlying productivity growth is smooth. These fluctuations may be even larger if real convergence is accompanied by false expectations. However, the main policy conclusions follow from comparing the scenarios across various exchange rate regimes. In particular, flexible exchange rate was found to smooth real convergence processes if these were driven by tradable sector developments.

The opposite conclusion could be drawn if such processes concern sectors producing nontradable goods.

In a related paper (Brzoza-Brzezina, Jacquinet and Kolasa, 2010a) I examined with my co-authors a nominal rather than real aspect of convergence that may be related to joining the common currency area, namely the possibility of unsustainable booms sparked by a fall in short-term interest rates to the level set by the European Central Bank. This risk is particularly relevant to so-called catching-up economies such as Poland since in such countries the real interest rates are usually higher than in the Eurozone (Schadler, Drummond, Flavio, Kuijs, Murgasova and van Elkan, 2005). As a tool we used the EAGLE model, this time calibrated to include Poland, the euro area, the US, and the rest of the world, and modified to account for import content of exports as well as impact of government spending on households' utility.

In the baseline scenario the generated boom was caused by an increase in access to foreign credit following Poland's hypothetical accession to the euro area. The main goal of the paper was to examine to what extent standard economic policy instruments that are still available at home after adopting the common currency can be efficient at smoothing such an unsustainable boom. To this end we considered four instruments: one-off exchange rate revaluation at the moment of the irrevocable currency conversion, a hike in the VAT tax rate, a hike in the PIT tax rate and a cut in government spending. Apart from their ability to smooth the boom-bust cycle, the policies were evaluated using the model-consistent welfare as an optimality criterion.

The obtained results pointed at exchange rate revaluation as the best of the four considered interventions. It was found to be able to dampen excessive expansion in GDP and both of private domestic demand components (consumption and investment), limit inflation pressure and is preferred from the welfare perspective. This policy also seems to be relatively easy to implement compared to changes in the tax rates, for which the required scale of adjustment turns out to be large. The results presented above are robust to an alternative force driving the boom-bust cycle, based on overly optimistic expectations defined as in my previously discussed paper (Kolasa, 2010a).

Another paper of mine that was aimed at examining the possibility to prevent economic imbalances in a heterogeneous monetary union was an article published as Brzoza-Brzezina, Kolasa and Makarski (2013b). This time, in line with the so-called peripheral euro area member countries' experience, the sources of asymmetric developments additionally included shocks related to the housing market. As shown by in't Veld, Pagano, Raciborski, Ratto and Roeger (2012), this type of disturbances explain to large extent the expansion in mortgage loans, residential investment boom and housing price increases observed in some Eurozone members. In contrast to my previously discussed work (Brzoza-Brzezina, Jacquinet and Kolasa, 2010a), the considered stabilization policy tools included two macroprudential

policy instruments. These were: regulating the maximal loan-to-value (LTV) ratio and the capital adequacy (CA) ratio, the latter defined as banking sector equity over loans.

The simulations were conducted using a two-country DSGE model, developed especially for this purpose. They showed that countercyclical adjustments of either of the considered instruments can decrease the amplitude of economic fluctuations in the peripheral euro area countries. In this respect, however, LTV policy turned out to be much more efficient than CA policy. In particular, the former was able to bring the volatility of GDP even to levels observed before the euro adoption. Importantly in the context of the sources of the observed imbalances in the euro area, macroprudential policy was found to be particularly efficient in handling asymmetric shocks originating in the housing market as well as common monetary policy disturbances. However, for this kind of regulations to play their countercyclical role, they must be set at a member country level. Common macroprudential policy, which fixes the LTV or CA ratios at the same level for the whole euro area, is not able to stabilize the Eurozone periphery.

3.3 Business cycle forecasting

An important area of my research was the use of DSGE models for forecasting the main macroeconomic variables. In my paper (Kolasa, Rubaszek and Skrzypczyński, 2012) I checked with my co-authors whether a standard New Keynesian DSGE model, represented by the framework of Smets and Wouters (2007) can be competitive with Bayesian vector autoregressions (BVAR) or professional forecasters. In the case of BVARs, the prior information was defined using restrictions implied by the DSGE model as in Del Negro and Schorfheide (2004). The earlier version of our paper (Kolasa, Rubaszek and Skrzypczyński, 2009) also includes the results obtained for a standard parameterization of BVAR models (Litterman, 1986).

Tests of forecast quality were conducted using quarterly data for the US economy for three main macroeconomic categories (GDP, inflation and short-term interest rate). To ensure comparability between expert and model-based forecasts, using real-time data was essential. Additionally, to account for some information advantage of experts, related to availability of data of higher than quarterly frequency, we additionally considered a variant in which model forecasts were conditioned on experts' nowcasts. Another distinctive feature of our article was that we considered not only point forecasts, but also density forecasts.

The obtained results indicate that a standard DSGE model can forecast GDP dynamics better than professional forecasters, with a similar quality of inflation forecasts and worse accuracy of predictions for the interest rates. Importantly, however, conditioning DSGE model-based forecasts on experts' nowcasts made the quality of interest rate forecasts generated from the DSGE model statistically indistinguishable from those made by experts, preserving at the same time the superiority of the DSGE model for output forecasts. This result suggests that

after controlling in the forecasting contest for experts' information advantage concerning the current quarter, DSGE models can offer forecasts of higher accuracy than those made by experts.

Another important result discussed in the presented article is better quality of DSGE model-based forecasts compared to BVARs. We showed that this finding can be explained by problems with approximating DSGE models with vector autoregressions whose number of lags is consistent with what is possible in practical empirical applications. This conclusion adds to the discussion on the ability of VAR models to capture the dynamics implied by the currently used structural business cycle models (Chari, Kehoe and McGrattan, 2008).

Finally, the findings presented in our paper point at several deficiencies in DSGE model-based forecasts. These include i.a. unsatisfactory accuracy of predictions in the absolute sense (low correlation of forecasts with actuals) as well as poor quality of density forecasts. These conclusions set natural research directions in this field that I am taking in the currently managed research project financed by Poland's National Research Centre for years 2013-2016.

3.4 Impact of financial frictions on business cycle

The last research area in my single-topic series of publications is more methodological and concerns incorporating financial market imperfections into DSGE models, as well as their implications for business cycle analysis and optimal stabilization policy. Consequently, this stream of my research adds to the literature aimed at bridging the gaps in macroeconomic modeling that were exposed by the recent financial crisis. One of my contributions of this type is also the previously discussed paper Brzoza-Brzezina, Kolasa and Makarski (2013b).

Most of the published model development projects whose goal was to supplement the standard New Keynesian setup with frictions in financial intermediation were based on either of two theoretical frameworks proposed long before the collapse of US economic activity in 2007. These were the so-called financial accelerator mechanism (Bernanke, Gertler and Gilchrist, 1999) and the collateral constraint (Kiyotaki and Moore, 1997). However, the implications of these two modeling choices for standard business cycle model dynamics were hardly explored. In my paper published as Brzoza-Brzezina, Kolasa and Makarski (2013a) we thoroughly investigated these two alternative mechanisms, incorporating them into a medium-sized DSGE model. The comparison was based on the models' ability to match the moments of standard macroeconomic aggregates of the US economy, the impulse response analysis and the business cycle accounting developed by Chari, Kehoe and McGrattan (2007). This last tool was also used in my other research published as Kolasa (2013a) and discussed in section 3.1.

It turned out that both alternative attempts can improve the properties of the standard New Keynesian model. However, their implications for some of the variables do differ substantially. In particular, the Kiyotaki and Moore (1997) setup generates too strong and short-lived responses to standard macroeconomic shocks and is hence inconsistent with other research using structural vector autoregressions. Moreover, it implies the volatility of capital and the rate of return on capital that are too large compared with the data. The obtained results suggest therefore that a better framework to describe the role of financial sector in business cycle is the one proposed by Bernanke, Gertler and Gilchrist (1999).

In a follow-up article (Brzoza-Brzezina and Kolasa, 2013), the analysis presented above was supplemented by a formal econometric investigation. More precisely, the alternative models were extended (i.a. with wage rigidities) and estimated using US data with Bayesian methods. By applying the marginal data density as a measure of performance, we were able to confirm the previous finding, according to which the Bernanke, Gertler and Gilchrist (1999) model fits the data better than the standard New Keynesian setup or its extension with collateral constraints as in Kiyotaki and Moore (1997). Importantly, however, even this preferred variant does not offer a breakthrough in business cycle modeling compared to the standard setups that abstract away from financial frictions.

Another important finding is an observation that in both extensions financial shocks account only for a relatively small proportion of volatility of standard macroeconomic aggregates, even though they are key in matching the volatility of financial variables such as loans and interest paid on loans. In particular, financial shocks identified in this model did not play a decisive role in the sharp collapse in economic activity observed in the US economy during the recent financial crisis, which seems to be inconsistent with other empirical evidence.

Summing up the two articles presented in this section, their conclusions point at the need to search for other modeling frameworks that could better describe the linkages between the real economy and the financial sector. This is also one of the aims of the currently run research projects, in which I am one of the main contractors and which is financed by Poland's National Research Center.

The last of my papers on modeling financial frictions (Kolasa and Lombardo, 2013) offers a fully-fledged normative monetary policy analysis. In this project, the optimal policy is defined as setting the short-term interest rates such that welfare of a representative household is maximized. The aim was to show how allowing for imperfections in financial intermediation affects so defined optimal monetary policy conducted in an open economy.

It was exactly including in such an analysis international linkages, including tradable and nontradable goods, foreign currency denomination of debt and incompleteness of international financial markets, that makes the paper's main contribution to the literature, relying until then on closed economy models (e.g. Carlstrom, Fuerst and Paustian, 2010). In particular, we were the first to demonstrate that exchange rate adjustments tend to

introduce a wedge between the external cost of finance across countries and, hence, they make the cooperative goal of return equalization a more difficult task.

In this article we also showed that financial frictions introduce important modifications to optimal monetary policy conduct compared to a model that assumes frictionless markets. For instance, pursuing strict price stabilization by the central bank in response to productivity shocks results in excessive fluctuations in economic activity. The cooperative central bank should also temporarily deviate from the price stability objective in response to shocks affecting balance sheets of firms. Too aggressive stabilization of producer prices can be particularly costly if domestic enterprises hold debt denominated in foreign currency and external shocks account for most of fluctuations.

Overall, according to our results, frictions in financial intermediation decrease attractiveness of all standard regimes relying on strict stabilization of inflation, measured using either producer or consumer prices. However, financial frictions do not significantly affect the functioning of a monetary union.

4. Other major publications

Apart from articles indicated as the single-topic series of publications, my research activities also resulted in several other papers, the most important of which are summarized below.²

In Kocięcki, Kolasa and Rubaszek (2012) I showed with my co-authors how one can use Bayesian methods to combine model-based forecasts with those formulated by experts. A simple example using an autoregressive process and inflation forecasts collected in the Survey of Professional Forecasters renders support to the usefulness of the proposed method.

Other two papers analyze the impact of internationalization of Polish firms on their economic performance. In the first of them (Hagemeyer and Kolasa, 2011) we demonstrated that foreign-owned firms, exporters and investment goods importers perform much better and also generate positive spillovers to other firms. In Kolasa, Rubaszek and Taglioni (2010) we pointed out that Polish foreign-owned firms fared much better during the recent financial crisis. Our results indicate that this effect might be due to intra-group lending mechanisms supporting affiliates facing external credit constraints from the local banking sector.

The goal of three other papers was to examine the main determinants of productivity growth in Polish enterprises. In my article published soon after I defended my Ph.D. thesis

² A full list of my publications is given in Annex 3.

(Kolasa, 2008b) I identified the crucial role of absorptive capacity in the process of real convergence, accumulated via research and development activities. A similar finding could be formulated in my paper published in the same year (Kolasa, 2008c) in the context of horizontal or vertical spillovers from foreign direct investment. Finally, in my paper published as Bijsterbosch and Kolasa (2010), I positively verified the hypothesis of a significant role of absorptive capacity, this time measured with human capital quality, using a sample of Central and Eastern European countries.

Finally, I mention my three survey papers, the aim of which was to make the topics discussed more accessible to the readers in comparison to the original contributions. In one of my works (Kolasa, 2012) I presented the real business cycle model and discussed its main implications. In another article (Kolasa, 2010) I reviewed the strand of literature on how the standard New Keynesian setup should be modified to make it useful for policy advice during a financial turmoil. The third important article of this type is Brzoza-Brzezina, Kolasa, Koloch, Makarski and Rubaszek (2013), where I showed with my co-authors how relaxing the representative agent assumption affects conclusions on such topics as the optimal rate of inflation, monetary transmission mechanism or uniqueness of equilibrium in a sticky price environment.

5. Summary of scientific achievements³

When submitting this document, my scientific accomplishments include i.a.:

- 15 articles in scientific journals listed in the Journal Citation Reports,
- 10 articles in other scientific journals classified by the MNSiW,
- 5 book chapters,
- 31 papers in other scientific journals and working papers.

The current summary impact factor for these publications is 11.245, and its five-year version equals 13.662. Correcting the co-authored articles for appropriate weights reflecting the relative contributions (see Annex 5), these indicators become 5.797 and 7.144, respectively. According to the current MNSiW ranking, my published papers scored 464 points, or 266.2 after adjusting for my co-authors' contributions.

My research papers are cited in national and international journals.⁴ The total number of citations of my works according to Google Scholar amounts to 388, which yields the Hirsch index equal to 12. In the IDEAS/RePEc service there are 106 citations of my works (excluding self-citations), which gives the Hirsch index equal to 7. Finally, the number of citations of my

³ Detailed data underlying the indicators presented in this section can be found in Annex 3, 4 and 5.

⁴ The citation indicators are reported as of 15 October 2013.

papers (excluding self-citations) according to the Web of Science is 49, and my Hirsch index is 5.

These accomplishments are confirmed by a high position in the ranking of economists published by IDEAS/RePEc, which takes into account i.a. the quality of published works and citations. If only economists affiliated with Polish institutions are included, I rank fifth, with only one out of four that rank higher not having the full professor title.

My papers have been presented at many prestigious national and international conferences, including: Congress of the European Economic Association, Econometric Society European Meeting, Computing in Economics and Finance, Society for Nonlinear Dynamics and Econometrics, International Symposium on Forecasting, Dynare Conference, Central Bank Macroeconomic Modelling Workshop, Money and Macro Finance Research, Ecomod and Spring Meeting of Young Economists. It is also worth to mention my research visits in the European Central Bank, Norges Bank and Schweizerische Nationalbank.

Since 2009 I am a member of editorial board of "Bank and Credit", where I regularly referee some of the submitted articles. I also refereed papers submitted to 10 journals from the Journal Citation Reports database.

My papers have received two international awards (the Olga Radzyner Award and Best Paper Award at the 15th Spring Meeting of Young Economists). I am the project manager of the SONATA BIS grant and main contractor at the OPUS grant (both financed by Poland's National Research Centre). I also participated (once as project manager) at two grants for young researchers of the WSE and at the research project MICRO-DYN (financed by the EU 6th framework program). I have also been awarded by the WSE Rector for my research publications.

Finally I want to summarize my teaching and popularization activity. Apart from lecturing at the WSE, I supervised 3 bachelor theses and 6 master theses, contributed to 6 courses on introduction to DSGE modeling for NBP and other central bank employees, and also co-organized two international scientific conferences.

6. References

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