ZAŁĄCZNIK 3

AUTOREFERAT W JĘZYKU ANGIELSKIM

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AUTOREFERAT

1. NAME AND SURNAME

Magdalena Redo

2. DIPLOMAS AND SCIENTIFIC DEGREES

a. doctor of economic sciences in the discipline of economics, Faculty of Economic Sciences and Management of Nicolaus Copernicus University in Torun, 2003

   The title of the doctoral dissertation: The impact of monetary integration on the economic situation of the European Union countries and its implications for Poland

b. master's degree in Management and marketing, Faculty of Economic Sciences and Management of Nicolaus Copernicus University in Torun, 1998

3. INFORMATION ON PREVIOUS EMPLOYMENT In higher education

a. since 2007 assistant professor at the Faculty of Political Science and International Studies at the University of Nicolaus Copernicus in Torun

b. 1999-2007 assistant professor at Wyższa Szkoła Bankowa w Toruniu (until 2004 assistant)

c. 2005-2013 assistant professor at Toruńska Szkoła Wyższa

d. since 2013 lecturer at Wyższa Szkoła Bankowa w Toruniu (part-time)

e. since 2015 lecturer at Wyższa Szkoła Gospodarki w Bydgoszczy (part-time)

4. SCIENTIFIC ACHIEVEMENT

a. title of scientific achievement:

   FLEXIBLE ECONOMIC POLICY AS A DETERMINANT OF THE ECONOMIC SECURITY OF THE STATE AND NATIONAL SECURITY

   the scientific achievement consists of an author's scientific monograph and a series of 12 author's scientific papers related by topic

b. list of publications constituting a scientific achievement:

1. **MORE ACTIVE MONETARY POLICY AS AN ALTERNATIVE FOR EXCESSIVE FISCAL EXPANSION? ANALYSIS OF THE EFFECTIVENESS OF THE MONETARY POLICY TRANSMISSION MECHANISM**

   Redo M. (2019), *Znaczenie skuteczności polityki pieniężnej dla bezpieczeństwa państwa*, Wyd. Adam Marszałek (co-financed by the Faculty of Political Science and International Studies at the Nicolaus Copernicus University in Torun), Toruń, ISBN 978-83-66220-58-4, pp. 206

   my contribution: 100%

2. **EXCESSIVE EXPANSIONARY FISCAL POLICY:**

   2.1. AS A FACTOR THAT RAISES MARKET COST OF CAPITAL

   - Redo M. (2017a), *Public finance security – the impact of fiscal expansion on the cost of capital in Poland and in other Central and Eastern European countries* [in:] *Economic security of the state. Conditions, processes, effects*, Jackiewicz A., Trzaskowska-Dmoch A. (ed.), CeDeWu, Warszawa, ISBN 978-83-7556-958-2 [pp. 193-211]

     my contribution: 100%

   - Redo M. (2017b), *Are budget deficits a threat to the market cost of capital? An analysis of the relationship between the yields of treasury bonds and the balance in public finances in the countries of Central and Eastern Europe belonging to the European Union in the period 2001-2015* [in:] Dimensions of European security, Leszczyński M., Molendowska M., Pawłuszko T. (ed.), Uniwersytet Jana Kochanowskiego w Kielcach, Kielce, ISBN 978-83-65139-89-4 [pp. 115-130]

     my contribution: 100%

   - Redo M. (2016), *Sustaining government budget deficits as a cause for the cost of public debt service increase in Western European countries in the 1995-2015 period*, “Torun International Studies”, No. 1 (9), December 2016, DOI: http://dx.doi.org/10.12775/TIS.2016.005 [pp. 57-65]

     my contribution: 100%

   - Redo M. (2017c), *High public debt servicing costs for the agency model of debt management in Poland*, “Law and Administration in Post-Soviet Europe”, Vol. 1, DOI: 10.1515/lape-2017-0004 [pp. 42-29]

     my contribution: 100%

2.2. AS A FACTOR THAT THREATENS THE PUBLIC FINANCES STABILITY, I.E. THE FUTURE FISCAL POLICY FLEXIBILITY AND EFFECTIVENESS

- Redo M. (2017d), *The level of tax rates and the situation of public finance in the European Union countries as a threat to economic development in Europe* [in:] Crises in modern Europe and attempts to overcome them, Garczewski K. (ed.), Toruń, ISBN 978-83-941877-8-1 [pp. 16-41]

  my contribution: 100%

- Redo M. (2018), *The issue of VAT gap in Poland in contrast to the European Union member states as a threat to financial security of the state,* „Przedsiębiorczość i Zarządzanie", Tom XIX, Vol. 2, Issue 3 [pp. 295-314]

  my contribution: 100%

- Redo M. (2018), *The VAT gap as a limiting factor for economic development of the Central and Eastern European countries belonging to the EU* ("Challenges of the Future", Slovenia, forthcoming)

  my contribution: 100%

- Redo M. (2017), *The changes of the government bonds' yield as an argument supporting the increase of value of the IMF's Flexible Credit Line for Poland*, „Przedsiębiorczość i Zarządzanie", Vol. XVIII, Issue 11 [pp. 79-93]

- my contribution: 100%

2.3. AS A FACTOR THAT LIMITS INVESTMENTS AND ECONOMIC GROWTH

- Redo M. (2017f), *Non-Keynesian correlation between economic growth and general government expenditure and revenue (in relation to GDP) in the years 2001–2015 in 11 countries of Central and Eastern Europe belonging to the European Union*, „Finanse", Vol. 1 (10) [pp. 57-77]

  my contribution: 100%

- Redo M. (2018), *The analysis of the correlation between the average change of general government revenue and expenditure (in relation to GDP) and the average change of gross fixed capital formation (in relation to GDP) in the 28 European Union countries in the years 2001-2015* [in:] Forecasting in social sciences. National and international dimension, Świeboda H. (ed.) (forthcoming)

  my contribution: 100%

- Redo M. (2017), *The analysis of the relationship between the level of public revenues and public expenditure (in relation to GDP) and the volume of investments in the 2001-2015 period in Central and Eastern European countries belonging to the European Union*, „Rocznik Instytutu Europy Środkowo-Wschodniej", Vol. 15, Issue 1, ISSN 1732-1395 [pp. 159-172]

  my contribution: 100%

- Redo M. (2018d), *Economic growth in a time of even higher public debt in the European Union countries in the years of 2001-2015* ("Confrontation and Cooperation: 1000 Years of Polish-German-Russian Relations", forthcoming)

  my contribution: 100%

c. description of the scientific goals of the research and the results achieved, together with a discussion of their possible use

The issue of growing debt, including private, public and foreign, has been increasing decade by decade and thus raises justifiable concerns over security of individual countries but also the global economy. Growing debt increases sensitivity of economies to shocks and increasingly limits the ability of economic policy to mitigation and overcoming of such. This leads to intensification of investment risk, especially in the case of developing economies which are less resistant and more susceptible to shocks. In the event of globalization and development of financial markets, the growing external financial dependency of economies increases the likelihood of the *sudden stop* phenomenon, that is the outflow of portfolio investment and the slowdown of its inflow, strong depreciation of the exchange rate and difficulties with debt roll over and in financing of the catching up process in terms of the development distance. Thus, these economies are paying a high price in the form of usually higher risk premium valuation which reflects high susceptibility, low resistance and higher sensitivity to phenomena that are independent of the given country's economy, that is turbulences on international markets, changes in investment strategies of financial institutions. The deepening external exposure of these economies additionally decreases the effectiveness of economic policies within the EU which are strained by public debt and in the case of which the concept of limited flexibility of fiscal policy negatively influences the effects undertaken actions. The above is a threat to the economic security of the state, the EU and the world. It should be emphasized that nowadays, economic security plays a key role in the three-pillar state security system (alongside military and political security; Stachowiak, Kurek, Kurek 2004, Wojtaszczyk 2009). It is the result of the progressive globalization process and financialization of the world economy which tighten interdependencies between individual security areas and expose the importance of economic security (Redo, Siemiątkowski 2017). Today, the economic situation determines the political (Gołębiewski 2015) and military strength of the state (Kurek 2014). Economization of the security of the state is even being mentioned (Jaźwiński 2014, Potulski 2011). Therefore, due to the key role of the economic security of the state in ensuring national security, it is necessary to manage economic security consisting, among others, of preventive recognition of threats to the functioning of the country, strengthening resistance to those and the ability to recover from crises (Raczkowski 2012). As economic security is a state of reality in which harmonious and unimpeded development of the economy is possible (Szubrycht 2006, Dziekański 2016) and main determinant of which is economic growth (Stachowiak 2014, Redo, Wójtowicz, Ciak 2018), the effectiveness of economic policy in stabilizing and supporting social and economic development determines not only the economic security of the state but also national security (Redo 2019)[1].

My research interests have, for the past 20 years, revolved around **economic security of Poland** (and Europe) and stem from the concern for a better tomorrow for the future generations in Poland and also from lost chances and unexploited opportunities after the transformation of the social-economic system. Thus, as a **scientific achievement**, I submit a **series of thematically related scientific publications**:

1. On one hand, these publications (12 scientific articles) identify and analyze the threats to the state's economic security, especially in terms of flexibility and effectiveness of economic policy which stem from excessive fiscal expansion in Poland. The analyses' results indicate that the expansive fiscal policy:
    - Firstly, increases the investment risk in Poland and, as a result, increases the market cost of capital (Redo 2017a, Redo 2017b, Redo 2016, Redo 2017c),
    - Secondly, threatens the stability of public finances in Poland, i.e. flexibility and effectiveness of future fiscal policy (Redo 2017d, Redo 2018a, Redo 2018b, Redo 2017e),
    - Thirdly, limits investment and economic growth (Redo 2017f, Redo 2018c, Redo 2017g, Redo 2018d).
2. On the other hand, Redo 2019 monograph presents the alternative, more active use of monetary policy which currently influences economic processes by a significantly greater number of channels than it is commonly believed which, as a result, contributes to the growing sensitivity of economies to the impulses of monetary policy. The results indicate that monetary policy can be a strong and a much more broadly influencing tool for shaping economic processes, the use of which could limit active and expansive character of fiscal policy in Poland and, as a result, strengthen the economic security of the state.

The main goal of my research was to analyze and evaluate economic safety in Poland which is understood as the ability of economic policy to shape the course of economic processes in order to strengthen economic stability and support social-economic development without the increased investment risk; another goal can be found in the attempt at indicating the directions of change which should improve the economic security of the state. To implement and achieve those goals, certain methods of content analysis, analysis of scientific discourse, quantitative methods (mainly descriptive statistics, analysis of correlation and linear regression) and comparative analysis were used; subsequently, using the method of inductive reasoning, the synthesis of results derived from comparative analyses of statistical data coming from websites of Eurostat, the European Commission, Central Statistical Office, the Ministry of Finance, the National Bank of Poland and others was made, as well as comparative analysis of results of global research on econometric modeling available in bibliometric databases such as Web of

[1] The full bibliographic reference to the publications cited in the above paragraph can be found in Redo 2019.

Science, Scopus, Journal Citation Reports, SciVal, InCites and in open access. In the beginning, the following **research questions** were asked:

1. What are the threats connected with fiscal expansion in Poland which has been sustained for years?
2. What are the currently known untraditional channels of transmitting monetary policy into economy?
   - Are they permeable?
   - Which factors determine their strength?

Finding answers to the above questions was supposed to help in finding a solution to the **main research dilemma** which was the answer to the following **question**: Is it possible to transfer the weight of the effect that the economic policy has on economic processes from fiscal policy onto monetary policy in such a way that it limits fiscal expansion to the extent of reducing negative effects of expansion on economic development and economic security of the state?

I began my research with a comparative analysis of the results of econometric modeling research analyzing the effects of fiscal expansion. More and more of them confirm the impact of public deficits and debt on the cost of capital. Based on the analysis of the results of empirical studies analyzing the impact of the public finance standing on the public debt servicing costs, I conducted a comparative analysis of debt servicing cost level in Poland and other Central and Eastern European (CEE) countries belonging to the European Union with the main macroeconomic indicators that determine the level of market interest rates (Redo 2017a). General government deficits in Poland which are permanent and are one of the highest within the EU led to the accumulation of significant public debt when in contrast to other countries in the region of CEE and result in higher investment risk premium which is reflected in lower rating, higher CDS spreads, higher yield of treasury bonds and higher level of capital cost – not only the cost of public debt servicing costs but also the cost of investment and consumption credits. It seems to confirm the influence of the fiscal expansion on the market cost of capital which determines investment and economic development. It must be stressed that general government deficits have been persistently in Poland for years, which threatens not only the stability of public finances in Poland but also limits the economic growth and the economic security of the state. In 2001-2015, only Romania, Hungary and Greece among the 28 EU countries had higher average yield of 10-year treasury bonds than Poland. It means that Poland spends every year one of the highest amounts of public money for public debt servicing. The consequence of this are also higher private debt servicing costs – both businesses and households, as a result of which their debts grow faster, worsen creditworthiness and consumption and investment opportunities, i.e. economic development prospects and, as a result, economic security of the state (Redo 2017b, Redo 2016).

The above differences in the level of credibility valuation, investment risk and market capital cost led me to verify the hypothesis of a negative correlation between the balance of the general government budget and the yield on treasury securities determining the interest rate on subsequent issues (i.e. the costs of servicing them), which confirmed the existence of a strong negative relationship between average general government balance (in relation to GDP) and average yield of 10-year government bonds in 15 Western EU countries over the 1995-2015 period (Pearson's r=–0,78). Sustaining higher general government deficits among the "EU-15" were accompanied by higher costs of public debt service over the last 21 years (Redo 2016). In the case of 10 CEE countries belonging to the EU, this relationship is also negative, but weaker (r=–0.31; Redo 2017b). It is worth noting, that in the case of CEE countries, the correlation was stronger before the 2008 crisis than in the years 2008-2015 – unlike in the EU15 (i.e. for the group of 15 EU countries from before the Eastern enlargement of the EU in 2004). It suggests a kind of understanding on the side of investors of the fact that developing economies, which are weaker and less resistant to crises, deal with the results of such crises in a much severe way; in this case, the strengthened dependency between economic factors and risk assessment made by investors in the event of a crisis which is observed in Western countries does not seem to work in this context. It gives hope to developing economies for the access to external financial sources in terms of their debt and development under relatively attractive conditions and, what is more important, also in the events of crisis or decreased risk acceptance, as long as the economic situation is under control and the chances of coming back on the track of relatively dynamic economic growth seem to be realistic. That is why after the crisis of 2008, such actions of investors and their appetite for risk should have been used to transform economic policy which would increase the opportunities for economic growth in Poland in the subsequent years; this would have strengthened the phenomenon of underestimated investment risk, lowered the capital cost in Poland and helped economic entities access external financial sources.

In connection with the above results and simultaneous lack of political and social will to lower the level of fiscal expansion in Poland, I decided to research alternative solutions which could increase economic security in Poland, i.e. strengthen the stability and credibility of Polish economy and also reduce risk premium and market cost of capital. For the purpose of this research, I conducted a content analysis and the synthesis of results by using the inductive reasoning method based on comparative analysis and the SWOT analysis which enabled a discussion about weak and strong sides of a given solution, as long as opportunities and threats related to that solution. In Redo 2017c, I presented arguments for the agency model of public debt management in Poland. The research results confirm the superiority of the agency model of public debt management and indicate that public debt management performed by an entity located outside of the ministry of finance results in domination of strategic aims over tactical aims, improvement in efficiency of management and investment, solution modernization and effective delegation and responsibility mechanisms for realized tasks. The main reason of limiting the possibility of using external institutions in the context of public debt management seems to be high political nature of economic policy in Poland and lack of consequence and effectiveness in the realization of strategy aims in the context of public debt management (frequent changes in terms of not overly ambitious aims which loosen the discipline). A few phenomena have become significant: *ad hoc* public debt management and temporary actions for rating agencies (only to prevent rating decrease) or for not exceeding of national and/or EU limits in terms of acceptable public debt or deficit level (to avoid precautionary procedures which limit the expansive character of fiscal policy or the procedure of excessive deficit which decreases credibility and increases capital cost). And although this issue can be found in the majority of the EU member states, its effects are much more severe in the case of developing economies where more expensive capital, as a result of overestimated investment risk, in combination with stronger demand for foreign capital, limits the process of catching up in terms of development and further strengthens the dependency: more expensive capital – faster debt growth.

In Redo 2017e, I presented arguments for using the Flexible Credit Line of the International Monetary Fund with higher value than in the period of 2009-2017 and simultaneous less active investment of parts of foreign exchange reserves of NBP to obtain higher profitability (at the same time pointing out the issue of exceptionally low profitability of over USD 100bn worth of foreign exchange reserves in Poland and also relatively high cost of sterilization related to ownership of those (cost of interest and discount from released debt securities) and cost of lost opportunities connected with low profitability securely invested foreign exchange reserves in Poland. The analysis of the correlation between the government bonds' yield changes in Poland and other CEE countries in the years 2006-2017, which I conducted, presents a stabilizing effect of the first two FCL agreements (from May 2009 and January 2011), resulting in a smaller increase (or a stronger decrease) in the market cost of capital in Poland (i.e. in the decrease of the correlation's strength of changes in the level of profitability of government bonds' yields). The results of this analysis additionally indicate that, even though FCL fulfilled its mission in the context of Poland in the period of European fiscal crisis, the extension of this so-called protective umbrella created, paradoxically, not only unnecessary financial cost in the form of annual fee for FCL, but also long-term threat to the economic security of the country, its development perspectives and future stability which is related to the observed in Poland phenomenon of moral hazard. Additional self-insurance demotivated the governments for almost a decade (2009-2017) in their actions to strengthen the stability and economic credibility, it dull its vigilance (and other economic entities), loosened the financial discipline and resulted in failure of actions within the economic policy which were supposed to, long term, improve competitiveness and development perspectives of Polish economy and, what is especially important in the case of sustained fiscal crisis of many European economies, of planned Brexit or much bigger bubble on main stock markets, to strengthen its resistance to external shocks which meant the increase of economic safety of the state. This is confirmed by the fact that Poland in the period of 2011-2016, despite having on average one of the highest economic growth among the EU countries (average per annum of 3%), would close its budget with one of the highest deficits: 3.5% of GDP on average.

It must also be added that the long sustained FCL created an illusory impression of stability and credibility of Polish economy, thus resulting in piling up of economic decisions made over the years in transition-like economic context, which underestimated the scale of changes in the years to come. It is noted by investors who assess the investment risk significantly higher, which makes the market cost of capital in Poland as the highest even among the CEE countries. Thus, it must be argued that the IMF should implement periodical limitation for the use of FCL to prevent its overuse by less credible and hence less resistant developing economies. Until this is not implemented, relatively cheap insurance of the IMF could be used in a greater amount than the FCL owned by Poland; profitability of foreign exchange reserves in Poland could also be increased to allow for more active investment by professionals on international financial markets. It would lower the annual general government borrowing needs and decrease the public debt growth in Poland; thus, it would also decrease its current and future servicing cost and the pressure of growth in terms of market cost of capital in Poland. It could also create a path for tax reduction.

It must be stressed that public levies in Europe are among the highest on the global scale, which is confirmed by the comparative analysis conducted in Redo 2017d; this comparative analysis dealt with diversification of the level of main fiscal burdens and the overall public revenue and expenditure (*general government*) in relations to GDP in the EU countries, and then these data were compared and contrasted with data acquired in other regions on the global scale. On the basis of the content analysis and the analysis of the level of imbalance of the country's budget and the increase of public debt in the period 2000-2015 and by using the method of inductive reasoning, I attempted at indicating threats related to the level of fiscal burdens, condition of public finance in the EU countries and the size of the public sector in the economy (measured by the relation between public revenue and expenditure to GDP) for the future rate of economic development of Europe, that is its economic security.

High public levies, in comparison with the rest of the world, lower competition of European manufacturers, purchasing power of Europeans' income, overestimate labor cost, discourage investment and encourage taxation avoidance. In the context of globalization and obligatory solutions on the common European market, current tax solutions seem to be increasingly prone to misuse, hence ineffective. It is fueled by growing competition of low-cost emerging economies which are gaining more and more significance in global production and trade. What is more, it seems that in the face of very low wealth level in many countries in the world, this competition will only get intensified over the next decades. It should not come as a surprise that there is a growing interest for solutions which lower fiscal burden and improve profitability in countries where public levies are often significantly higher not only in comparison with tax havens. These differences encourage the transfer of businesses or income identification in countries with more attractive legal solutions (not only lower taxes). As a result, workplaces disappear, income decreases, tax revenue decreases as well as tax collection stability and certainty drop. It limits the ability of economic policy to fulfill its current tasks and deal with crisis which, additionally, increases investment risk and limits development opportunities of a given economy. Thus, it also lowers economic security of the state – especially in the context of developing economies with lower ability of attracting foreign capital and with less stable access to such capital. A proof of the great importance of this problem are high estimates of tax gaps in both CIT and VAT in Europe. The comparison analysis of the nominal GDP changes and nominal tax revenue changes in Poland in the years 2003-2016 and the international comparison analysis of the VAT gap level in the EU countries carried out in Redo 2018a indicates that the VAT gap in Poland belongs to the highest among the EU countries. According to the European Commission's estimates the VAT gap in Poland amounted to 31.7% of VAT revenue in 2014 and was the 7th highest VAT gap among EU countries when it comes to the VAT gap size in relation to VAT revenue. It is also three times higher than in the half of the EU member states and two times higher than the EU's average for 2014 (16.3%). In the situation of permanent budget deficits and dynamically growing public debt in Poland it increases instability of sources for public expenditures and reduces public finance security and also economic security of the state. It has an effect on estimating Polish economy's credibility, thus market cost of capital, i.e. future investment level, entities' creditworthiness, consumption level and the rate of debt growth.

The continuation of the above study, which focuses on Poland, is the analysis of correlation carried out at Redo 2018b between the yearly changes in nominal GDP and the yearly changes in nominal VAT revenue in the CEE countries belonging to the EU within the 2000-2016 period (chain base indices). The results show very strong positive dependence in the case of 8 out of 11 CEE countries (Pearson's r from 0.78 to 0.93) and strong correlation in the case of rest 3 CEE countries (Pearson's r from 0.59 to 0.69). But it must be stressed that the assessment of these results must take into account changes in the VAT rates introduced in almost all CEE countries as the consequence of 2008 crisis. That's why these very high Pearson's correlation coefficients between analyzed values, though VAT rates were increased almost in all CEE countries (in some of them significantly) seem to confirm a growing problem with VAT collection.

It must be stressed that the VAT collection effectiveness plays a crucial role in Europe, because VAT revenues provide from 1/3 to even half of the total tax revenues in the EU countries, so they determine the effectiveness of economic policy in controlling the course of economic processes and its ability to cope with crises. This is especially important in the case of less credible CEE countries, as VAT revenues are also an important source of the EU budget revenues (in 2015 they provided 12.3% of the total EU budget revenue, i.e. EUR 18.1bn), which is a key source of investments in regional development of poorer EU countries; including Poland, which since 2009 is the largest nominal net beneficiary of the EU budget. The growing issue of the VAT gap is causing further decrease in financial independency of the EU as it increases the weight of the largest EU budget's revenue based on GNI, dependent on national policy through annually enacted states' budgets. The issue of big and/or growing VAT gap in some of the EU member states forces setting a higher GNI call rate (the GNI percentage that a member state pays in the form of the EU budget's fourth source of financing) and causing the increase in expenditures from the state budget (decreasing its balance or forcing savings in financing public expenditures) as well as the increase of uncertainty in both financing of the EU's budget and national economic policies.

Without a doubt, it is necessary to tighten the tax system up and track illegal activities, but it must be noted that constant changes in business rules create additional uncertainty and new solutions complicate the situation in already complicated tax systems. It all discourages people from establishing and developing enterprises, as it also encourages them to look for simpler and more profitable solutions in other countries which is easier thanks to globalization, membership in the EU and international legal environment.

The above mentioned serves as a strong argument for reduction of taxes and public expenditure in Europe, especially that more and more research on economic effects of consolidating public finances are pointing that despite conventional economic knowledge (evolution of which is limited by political interests and demanding attitude of public in terms of developed system of public service which is visible especially in Europe), increase in public expenditure does not guarantee faster economic growth (and can, in fact, cause a slowdown of economic growth), and economic recovery might be an effect of public expenditure reduction. Credibility and lasting character of undertaken actions are key to achieving non-Keynesian effects of fiscal consolidation to influence change of future market expectations. Economic circumstances in which these actions are undertaken are also important, as they can strengthen or weaken the expansive effects of consolidation. These effects can be strengthened by stagnation period also in neighboring countries which is preceded by depreciation of exchange rate, common fiscal and monetary expansion, investors' search for higher profitability. The above mentioned do not contradict the already acquired knowledge but it points out the evolution of economic processes in the times of progressive globalization and development of financial markets, where investors are faster and more accurate at identifying threats to the realization of planned profits and they revise previous investment strategy which, additionally, increases the number of investment alternatives in the world of a dynamically growing demand for financing debt and development – in the world where there is strong competition between all economies. The hundreds of trillions of dollars of capital located on financial markets which is being multiplied year after year, constitutes cheaper and more accessible alternative for a source of public financing; it also limits the effectiveness of fiscal expansion, strengthen the effect of crowding out in the situation of rapid expansion of borrowing needs, growing indebtedness of countries, increasing transparency of debt market where revision of economic credibility and relocation of capital (and investment) is currently being made faster.

In Redo 2017f, the comparative analysis of empirical data of econometric modeling related to non-Keynesian reaction of economy on fiscal policy actions inspired me to verify the hypothesis of correlation between general government revenue and expenditure (in relations to GDP) and economic growth in EU countries. The analysis of the correlation shows a strong negative relationship between the average size of the public sector in the economy (measured by the level of public revenue and public expenditure in relation to GDP) and the average level of economic growth in the years 2001-2015 in 11 CEE countries belonging to the EU. Pearson's correlation coefficients for the dependency between the average level of the general government revenue (in relation to GDP) and the average level of economic growth in the years 2001-2015 amounted to –0,89, and between the average level of the general government expenditure (in relation to GDP) and the average level of economic growth amounted to –0,86. This correlation in other economies is weaker. In the case of the EU15 countries, the correlation coefficient was calculated respectively at –0,35 and –0,57. It seems to confirm the theory that the level of the public finance sector size in the economy is a significantly strong determiner of the economic growth rate in developing economies[2]. The above results, along with conclusions drawn from the comparative analysis of global econometric modeling research results suggest that sustainable reduction of the public finance size in relation to GDP in Poland (significant and sustainable decrease of public expenditure which gives way to sustainable reduction of fiscal burden) would accelerate economic growth in the long term. The positive effect of the consolidation would be the most significant if these actions were conducted around 2011-2012 and were accompanied by other pro-growth actions.

Along with the empirical research results, investments could be responsible for the expansive effect of fiscal consolidation. The results of global econometric modeling research prove that the increased public expenditure causes significant investment decrease and, what is more, stronger tax increase (and reduction of public expenditure causes investment growth). It must be noted that the sensitivity of investment to the level of public expenditure differs depending on its kind – there is stronger sensitivity in the case of salaries in public administration and the transfer rates, as these put pressure on salaries in the private sector, at the same time limiting the profits of businesses and their investment tendencies. Even though the reaction of investments to the tax levels is less significant, but still varies – it is stronger in the case of income tax which directly influences net profitability of businesses. Thus, the structure of tax system and main groups of public expenditures at least in part explains the different reactions of economies to the use of fiscal policy tools. That is why it is necessary to identify sensi-

[2] The results of the conducted analysis of correlation between the average level of the public finances sector size in the economy (measured by the level of general government revenue and expenditure in relations to GDP) and the average level of economic growth among the EU15 countries (and all of the EU) were published in Redo M., Wójtowicz K., Ciak J. (2018), *Bezpieczeństwo finansów publicznych*, CeDeWu.

tivity of economies, especially investments, to selected fiscal tools and to adjust the use of those to specific economies. It must be also noted that the research results suggest that fiscal consolidation involving the reduction of public expenditure more often results in investment growth and causes production growth (in comparison with consolidation conducted by tax increase) and is less severe.

The results of research carried out in Redo 2018c are consistent with the above conclusions, which showed a negative (and much stronger) correlation between the change in the level of general government expenditure (in relation to GDP) and the change in the gross fixed capital formation (in relation to GDP) in 2001- 2015 in a much larger number of EU countries than in the case of changes in the level of public revenues: in 24 out of 28 EU countries (with an annual investment delay in 22), while in the case of public revenues in 13 countries (with an annual delay in 15). Corresponding to this are also the results of the correlation between the average change in the level of general government revenue and expenditure (in relation to GDP) and the average change in the gross fixed capital formation (in relation to GDP) in 2001-2015 in the European Union countries (geometric mean of chain indices), which showed stronger dependence in the case of public expenditure for the group of 28 EU countries (the strongest with a two-year delay in investments, r=–0.62). Interestingly, correlation coefficients assigned separately for the CEE and EU15 countries give different results: in the case of CEE countries they are in line with those for the entire EU28 (i.e. stronger in the case of changes in public expenditure), whereas in the case of EU15 countries it is exactly the opposite, i.e. correlation coefficients are stronger (for both the current year and with delays) in the case of changes in public revenues. It seems to be related to the higher CIT level in most EU15 countries, whose reduction could contribute to a stronger reaction in investments in these countries. In turn in the CEE countries, the level of public expenditure seems to be the stronger factor determining the level of investment: their reduction would slow down the public debt growth (and perhaps its nominal reduction) and reduce the market cost of capital (thanks to the decrease of risk premium and smaller capital absorption from the domestic financial market by the general government).

The investment drop in Poland, which was observed in the period 2016-2017, and the results of the above empirical research led me to verify the hypothesis on negative correlation between the average rate of public revenue and public expenditure (general government in relation to GDP) and average investment level in the period 2001-2015 in the CEE countries which belong to the EU. It must be noted that Poland is one of the CEE countries which have the highest level of the general government revenue and expenditure in relation to GDP. Public expenditure in Poland in the period 2001-2015 amounted to around 39.5% of GDP, and public expenditures to 43.9% of GDP and these placed Poland above average for 11 CEE countries which was estimated at respectively 38.4% and 41.6% of GDP. What is more, Poland in the period 2001-2015 had the lowest investment rate on average (in relation to GDP) among all CEE countries (20.1 of GDP compared with the CEE average of 24.4% GDP). The correlation analysis conducted in Redo 2017g shows the existence of a negative (moderate weak) relationship between the average level of investment and the average size of the public sector in the economy (measured by the level of public revenue and public expenditure in relation to GDP) in the years 2001-2015 in 11 CEE countries belonging to the EU (stronger for general government expenditure: r=–0.36 and weaker for general government revenue: r=–0.22). It means that higher average general government expenditure and revenue level (in relation to GDP) in the CEE countries in the period 2001-2015 is accompanied by average lower investment rate (in relation to GDP). This correlation is not strong but can in part explain the previously mentioned strong correlation between general government revenue and expenditure and economic growth in 11 countries of CEE in the period of 2001-2015, as indicated by Redo 2017f. The analysis of the above correlation (between the average general government revenue and expenditure level and the average investment rate, in relation to GDP) made for individual economies indicated negative correlation in 9 out of 11 CEE countries (both in the case of public revenue and also public expenditure), where in 4 cases this correlation was either strong or very strong.

These results confirm currently limited effectiveness of fiscal expansion in investment stimulation (and economic growth) and are related to the results indicating the presence of non-Keynesian reaction of economy to fiscal actions. They seem to favor the argument of sustainable reduction of public expenditure to limit economic dependency of external financing, lower investment risk premium and capital cost, as well as increase flexibility of economic policy and, as a result, strengthen of the economy's resistance to shocks and improve development perspectives; this should contribute to investment growth and increased economic security of the country.

The expansive fiscal policy which has been in use for the last decades in many European countries, along with high and/or growing public expenditure led to the accumulation of high public debt of which servicing cost and rolling over seem to limit development. The results of the above research and comparative analysis of global econometric modeling research results led me to verify the hypothesis of correlation between public debt and economic growth in the EU countries. Many empirical studies points out to the negative correlation between these two economic variables, especially stronger when debt exceed 90-100% of GDP. But some of them suggest that the negative growth effect of high debt may start already from levels of around 70-80% of GDP. There is a new dimension for the discussion about the cause and effect relationship between the public debt level and economic growth. The unprecedented growth of public debt in many countries as a result of the crisis of 2008 questions future progress of civilization in the view of this correlation. Researches mostly agree on the presence of negative correlation between the public debt level and economic growth; that is, higher public debt is accompanied with slower economic growth. There are ongoing doubts regarding diverse results of interaction of these values. However, it seems that, in the era of an increased amount of capital in financial markets, their transparency and strong competition strengthening investors' rationality, it is safe to say that the negative effect of public debt on economic growth, the strength of this phenomenon and the border debt level (when this effect starts increasing) are determined by market expectations in terms of economic abilities of a given country to return on the path of relatively dynamic economic growth, meaning the one that enables maintenance of high and growing debt without limiting development possibilities – without strengthening instability and investment risk. The trust of investors and other economic entities regarding the effectiveness of economic policy and, in the case of ultra low interest rates – fiscal policy, seem to be the key in supporting the economy on its way back to stable growth. The above is reflected in ratings of individual economies, yields of treasury bonds or CDS spreads. Debt level, which has been growing for decades worldwide (not of governments only) creates, in the case of constantly increasing financial markets' wealth, increases the risk tolerance and the appetite for risk as well as tolerance for continuously growing debt. This is also due to growing abilities of global economy to roll over and service increasing debts without limiting development possibilities of global economy.

The results of a conducted in Redo 2018d correlation analysis are in coherence with the above, as they confirm the presence of a relatively strong negative correlation between the general government debt level and economic growth in the EU countries within 2001-2015 period (r=–0.72). In the case of EU15 countries the correlation was weaker before outbreak of the 2008 crisis and much more weaker than in the CEE countries. It seems to be connected to risk underestimation during bull market periods observed in some countries, also in some high indebted EU15 countries. In turn of CEE countries the correlation is much more weaker after 2008. It might be related to higher tolerance for fiscal expansion in the situation of crisis in the case of economies with lower public debt and, more importantly, in the case of developing economies – as those, as a rule, possess higher capabilities of obtaining higher rates of economic growth. It seems to confirm the importance of market expectations on capabilities of a given economy to return on the growth path.

In this case, the IMF's warning on low economic growth of countries that do not reduce public debt seems to refer only to those countries with high debt (not only public), strong dependence on external financing and unstable credibility.

The above research which indicates that fiscal expansion increases investment risk and leads to the increase in market cost of capital, limits investment and decreases economic growth, threatens the stability of public finances in Poland (i.e. flexibility and effectiveness of future fiscal policy, thus economic security of the state), led me to identify non-traditional channels of transmitting monetary policy into economy, to analyze its effectiveness and to identify determiners of channel permeability. As mentioned in the beginning, I suggested that finding the answers to these questions could help in solving the main research problem defined in Redo 2019 monograph, which was the answer to the following question: Is it possible to transfer the burden of influence that economic policy has on the economic processes from fiscal policy to monetary policy in the way that it would allow for limiting fiscal expansion to limit negative effects of this expansion on economic development and economic security of the state – through high public levies, increased investment risk, increased capital cost and limited investment profitability?

In Redo 2019 monograph, I described how important is the complexity of the mechanism of transmitting impulses of monetary policy into economy and I also introduced 7 non-traditional channels thanks to which the central bank influences economy (these channels were identified during my research): cost channel, stock market channel, Q Tobin channel, market expectation channel, risk-taking channel, regulation channel and balance sheet channel. 500 scientific publications which presented global research results on permeability of channels of transmitting monetary policy were analyzed. The synthesis of the results presented in the monograph seems to support the argument that monetary policy can be nowadays regarded as a strong tool for influencing the economic stability which can, at least in part, relieve fiscal policy which would be of benefit to economic security of the country.

To get to know the mechanism of transmitting monetary policy better and to formulate more accurate projections, I recommended the use of the **bidirectional recurrent artificial neural networks** to analyze the mechanism of transmitting monetary policy, thanks to which it was possible to catch previously overlooked connections and, as a result, to predict more effectively the results of actions of monetary tools and to increase the effectiveness of monetary policy in stabilizing and supporting economic processes and strengthen the economic security. Such network should include connections of single neurons with a varied number of other neurons, neuron connections between layers (not necessarily neighboring layers), as well as neuron connections within a given layer. What is important, these connection should more often have the two-way character. It is all about grasping complex dependencies and interdependencies both in every channel of transmitting monetary policy, but also between different channels of transmission. The interdisciplinary character of research and inclusion of other sciences as well as technologically advanced tools conditions improved development of social sciences where the need for formulating predictive conclusions is crucial.

The awareness of so many mechanisms which enable monetary policy to influence the behavior of market participants, and also the knowledge of actions and factors determining its permeability thanks to Redo 2019 seems to justify the statement that, in the case of fragmented financial markets in Europe, strongly dominated by the bank sector and treasury bond markets, limiting the expansive character of fiscal policy resulting in the decrease of general government borrowing needs in the EU countries would lead to the decrease of risk premium and capital cost, but would also enable easier access to it and contribute to the development of other financial market segments. It is especially crucial from the point of having access to development process financing of small and medium businesses as well as innovatory investment projects, especially in the case of weaker economies of the CEE countries, thus the rate of their social-economic growth and the process of catching up in terms of development. Additionally, it would improve the pass-through effect in terms of interest rates by changing the permeability of channels of transmitting monetary policy, increasing the influence of central banks on economy and increasing the effectiveness of monetary policy, which would allow to limit the expansive and active character of fiscal policy to even greater extent. It would increase the economic security of the country and thus the national security.

Despite the transitional and, hopefully, limited power of NBP's monetary policy due to significantly lower level of basic interest rates, it would be advised to take active measures of changing transmission channels functioning to enable effective influence of NBP's monetary policy onto the actions of economic entities. To enable the central bank to cause the desired changes in economic activity of market participants and to limit active and expansive character of fiscal policy which would benefit investment risk in Poland, market capital cost, financial market development, social-economic growth rate. It is key to accurately identify and monitor main determiners of permeability of transmission channels in a given economy (especially those that, due to economic changes of financial markets, regulations or other tools of economic policy, can significantly decrease the effectiveness of the central bank policy; and current consideration of these changes when defining monetary policy (and economic policy as a whole).

Due to the strong position of consolidated and highly regulated banking sector in Europe, which impede the access to financing development for small and medium businesses which are nowadays main creator of economic growth and workplaces, the key factor conditioning the effectiveness of monetary policy is found in all activities enabling development of national financial systems. Thus, it is essential to limit dominance and strong position of the banking sector, and to increase competition between financial institution and their capital (especially in the context of developing economies), prohibit overexcessive focus on particular areas of the financial market, separation of traditional commercial banking and investment banking (at least by limitations, also in terms of treasury securities), support development of other financial market segments, securitization, and above all increase financial awareness of the public (financial and economic education implemented from an early age, i.e. at least 1 class of economy and finance basics starting in the first grade and continued throughout the whole education cycle). In the case of advanced financialization of nowadays world, one must be familiar at least with basic financial and economic mechanisms. Without this knowledge, it is impossible to change the mentality of public and to get the public's approval to implement changes which give hope of regained by economic policy control over economic processes, which conditions its ability to strengthen economic security of the state and national security.

In order to allow the monetary policy to influence the behavior of market participants and the course of economic processes, it is necessary to introduce regulations increasing the tendency of banks to issue loans and regulations which will improve the pass-through effect in terms of interest rates. However, it will not be possible without having the treasury to withdraw from the national financial market as a borrower which not only took PLN 637bn of capital from the Polish financial market (according to the data acquired in the middle of 2018) which has limited abundance, but is also regularly deriving around PLN 120-140bn due to permanently high borrowing needs of the Polish treasury; additionally, the treasury takes away the opportunity of acquiring capital from private entities, limits development of other segments of the financial market (and sustains the privileged position of banks), and, what is significant, discourages banks to issue loans to businesses and households. The banking sector in Poland is the biggest owner of treasury securities (it owns 41% of all Polish treasury securities issued on the national market, which amounts to PLN 263bn). This amount could have been, for many years, used to finance the development of small and medium businesses. This situation reduces the banks' willingness to issue loans, increases cost, limits financing access, significantly interferes with the pass-through effect on interest rates, decreases the effectiveness of monetary policy in Poland and lowers the economic security of the country.

Limiting of the emission of treasury securities in Poland would improve the effectiveness and scope of the central bank's activities, and it would also favor development of other financial market segments. Especially that the growth of economic stability would result in lower risk premium, lower interest level, which would translate to growth on stock market, its development, loosened financial restrictions, improved development opportunities for small and medium businesses (key from the point of creating workplaces, salaries level, social-economic development). It would also lead to improved permeability and scope of the stock market channel, Q Tobin channel, cost channel and balance sheet channel in the mechanism of transmitting monetary policy which would extend the scope of the central bank's influence on access of economic entities to financial sources and it would improve the effectiveness of stabilizing and supporting the social-economic development.

In the case of significantly limited flexibility of fiscal policies in many countries, it is thus necessary to use already existing mechanisms of influencing economic processes. It is especially valid in the case of developing countries which can not afford not using these solutions in the process of catching up in terms of wealth.

Monetary policy is defined as a set of economic instruments which have strong and wide impact. Thanks to monetary policy the central bank has, on one hand, the possibility of influencing the financial situation of businesses, their development opportunities, economic opportunities; on the other hand, it has the ability to react to unfavorable course of events on financial markets of excessive enthusiasm of investors. The central bank can greatly influence functioning and development of financial market, especially the banking sector which is crucial for development of the small and medium businesses. To make it possible, it is necessary to re-regulate the banking sector so that it supports the social-economic development, the effectiveness of monetary policy and economic policy as a whole, including economic security of the states. It is important to develop regulations which stabilize the banking sector, even if it is not in terms of financing development and debt roll-off (in countries where its dominance is less significant), then from the point of transmission of monetary policy impulses into economy. Along with capital requirements, it seems crucial to implement liquidity requirements and improve clarity in securitization and, in the case of developing countries, to implement regulations limiting the growth of credit actions and excessive risk (in place of capital requirements which can lead to the decrease of bank liquidity, exacerbation of monetary policy, which result in the inflow of foreign capital, overestimation of markets, credit boom, appreciation of the currency rate, and decreased competition of national economy).

Economic policy is currently being implemented in an environment that can be characterized as globalized, dynamically changing and dominated by more affluent world of finance. One can not fail to see the threats related to the accumulation of great financial imbalances and relaxed risk externalization. Thus, every possible action must be undertaken to support financial stability, resistance to shocks, ability to overcome various crises. It is especially significant in the case of weaker economies which are exposed to credit crunch in a greater way and are characterized with lower effectiveness in terms of transmitting economic policy to stimulate the economy. Thus, in the case of increasing public, private and foreign debt, and also due to more freedom in acquiring capital and the development of risk-taking, it is essential to macromanage and monitor systematic risk as well as to closely coordinate it with monetary policy to neutralize the pro-cyclical nature of the regulation.

It is now too late but, in the case of the future financial crisis (which will, sooner or later, happen), the moment of shock must be used by politicians from main financial centers to reflect on the future and implement at least a part of above mentioned changes and to impose a few above mentioned limitations on financial institutions (which are currently dealing with hundreds of trillions of USD), to implement their taxation (financial institutions tax – FIT), as well as deepening of tax progression to dissipate assets, increase wealth of middle class, use in a solidary and common way the source principle in identifying the scope of tax claims in terms of tax collection. Subsequently, it is advised to use these means as credit source for small and medium businesses and to finance basic research which will be useful to the 7 billion inhabitants of the globe who, since the turn of the 80's and 90's of the 20th century have been victims and insignificant background to the entertainment of the narrow group of global finance. These solutions would not only enable the limitation of growth of global imbalances and the scale of future crises, but would also enable the support of global economic development, mitigation of crises, improvement of the monetary policy's effectiveness. This would, in turn, give way to limiting expansive and active nature of fiscal policy, which would influence growth of financial stability, improve flexibility and effectiveness of economic policy which would contribute to the strengthening of economic security of the state and the world in general.

5. OVERVIEW OF OTHER SCIENTIFIC AND RESEARCH ACHIEVEMENTS

After receiving my PhD in economic sciences in November of 2003, my scientific interests revolved around 2 main research areas. The first research area is concerned with financial security in the European Union, mainly opportunities and threats connected with introduction of the euro and the perspectives of Poland for joining the Eurozone as well as the financial system of the EU, i.e. the EU budget and European funds. 1 monograph with joint authorship titled *Ekonomiczne aspekty integracji wybranych państw Europy Środkowo-Wschodniej* (UMK, Toruń 2015), 22 independent scientific articles and 1 article with joint authorship were the result of the above mentioned analyses (the list of all thematically grouped publications is included in appendix 4.1). The second research area is concerned with financial security of businesses and focuses on searching for solutions in terms of managing finances by businesses to strengthen the stability of their functioning in the event of growing competition which forces the acceptance of increased risk. 4 monographs with joint authorship titled *Zarządzanie finansami przedsiębiorstwa* (TNOiK, 2006), *Analiza finansowa przedsiębiorstwa* (TNOiK, 2005), *Matematyka finansowa* (TNOiK 2005), *Zarządzanie finansami przedsiębiorstw – zbiór zadań* (TNOiK, 2004), and 2 independent scientific articles were the result of the above mentioned research.

Globalization, progressive process of European integration and simultaneous lack of political acceptance of introducing euro in Poland, led me to analyze the external financial security of Poland and credibility market value of various EU economies, which resulted in 1 monograph of joint authorship titled *Zewnętrzne bezpieczeństwo finansowe państwa* (UMK, Toruń 2017) and 26 independent scientific articles. Joining the EU advanced and intensified the process of external economic and financial dependency of the CEE countries, which was the result of advanced globalization and internationalization of businesses. A relatively quick accession which granted access to foreign markets and financial sources was not accompanied with appropriate strengthening of the economic structure. This lead to significant external dependency of the CEE countries which increased their vulnerability and sensitivity to shocks and limited their resistance to those. This situation caused a natural scientific curiosity in me to diagnose the condition of financial security in Poland (and other EU member states) to fully evaluate the economic security in Poland. This resulted in 2 monographs: one with joint authorship titled *Bezpieczeństwo finansów publicznych* (CeDeWu, 2018) and one independent monograph titled *Polityka fiskalna* (TNOiK, 2007), as well as 15 independent scientific articles (12 out of which are indicated as scientific achievements in this application). The conclusions derived from both of the research areas indicating that Polish economy is characterized with relatively strong external exposure and fiscal expansion in relations to its credibility (which increases the sensitivity of Polish economy to shocks and limits resistance to those), raised some concerns of mine in the context of future social-economic development in Poland, effectiveness of its economic policy and national security. That is why I was subsequently conducting scientific research to find solutions implementation of which would strengthen economic security in Poland. I focused mainly on the analysis of effectiveness of current monetary policy and its ability to stabilize and support economic processes and, as a result, the ability to strengthen the economic safety of the country. The partial results of the analyses were in part published in 6 scientific articles and then extended and advanced with the holistic view which enabled a much broader analysis of the effectiveness of economic policy, identification of new cause and effect relations and new conclusions which was not possible in partial research. The interdisciplinary nature of the conducted research greatly contributed to these results. The results were published in the independent monograph titled *Znaczenie skuteczności polityki pieniężnej dla bezpieczeństwa państwa* (Adam Marszałek, Toruń 2019), submitted as scientific achievement in this application.

Since obtaining my PhD, I have prepared 76 scientific publications, including:

- 9 monographs (2 independent),
- 62 independent scientific articles,
- 16 articles in English.

I have obtained 553 points of the Ministry of Science and Higher Education for the above mentioned publications. 10 of my independent articles were published in highly rated scientific journals (having 10-14 points of the Ministry of Science and Higher Education). According to the Google Scholar database, my publications have been quoted 189 times and have the Hirsch index on level 7 (appendix 4.2).

My monograph from 2018 titled *Bezpieczeństwo finansów publicznych* (CeDeWu, joint authorship with K. Wójtowicz and J. Ciak) won the award of the Rector of the Maria Curie Sklodowska University in Lublin (appendix 4.3).

In the period 2016-2018, I gave lectures during 22 scientific conferences (including 2 foreign conferences), mainly in the context of security. The list of these conferences is included in appendix 4.4. I am the co-organizer of *Interdyscyplinarny Zjazd Katedr i Zakładów Bezpieczeństwa* organized periodically by the Department of Internal and International Security of the Faculty of Political Sciences and International Studies at the Nicolaus Copernicus University in Torun as well as the co-athuor of publication titled: *Profile badawcze polskich katedr i zakładów bezpieczeństwa* (UMK, Toruń 2018), which is planned to be updated on a regular basis and expanded with the intention that it leads to closer scientific and research cooperation between the researchers in Poland dealing with the widely regarded security. The list of the scientific conferences that I have co-organized is included in appendix 4.5. Appendix 4.6 includes the list of scientific conferences where I held the position in the Scientific Council.

In 2018 (July-September), I completed a research and teaching internship at the War Studies University (Faculty of National Security) in Warsaw (appendix 4.7). I won 5 scholarships abroad in total, at the universities of Saarbrücken, Hanover, Heidelberg and Vienna (appendix 4.8).

I am an auxiliary supervisor for the PhD dissertation being written in the Faculty of Political Sciences and International Studies at the Nicolaus Copernicus University in Torun by a PhD candidate (appendix 4.9). I have been a supervisor of approximately 145 theses (including approx. 35 MA theses and approx. 110 BA theses). I have written approximately 120 reviews of MA and BA theses (appendix 4.10). I am a co-editor of the scientific journal *Torun International Studies* published by the Publishing House of the Nicolaus Copernicus University in Torun (appendix 4.11) and a reviewer in the scientific journals: *Przegląd Zachodni – The Journal of the Institute for Western Affairs* and *The Wroclaw School of Banking Research Journal* published by the WSB University in Wroclaw (appendix 4.12).

I participated in 5 scientific and research projects (including 2 foreign projects) and I was a co-author of their application of a science and research projects. I was a supervisor in two of them: titled *Bezpieczeństwo finansów publicznych* (2017-2018) and *Zewnętrzne bezpieczeń-*

stwo finansowe państwa (2016-2017). Full description of the nature of my activities in the above mentioned projects is included in appendix 4.13.

I actively engage in acquiring European funds for the higher education purposes (I am a co-author of 2 positively evaluated training projects); I take part in those projects as both a trainer and a participant to continue the development of my skills and competences. Since 2017, I have been a supervisor of the training project for students of the Faculty of Political Sciences and International Studies at the Nicolaus Copernicus University in Torun co-financed from the EU funds within the scope of the ESF which is titled *Studentki i studenci WPiSM poszukiwani na rynku pracy*! (2017-2020). Full description of the nature of my engagement in European projects is included in appendix 4.14.

I try to promote knowledge by cooperating with i.e. the Polish Economic Society within the scope of the National Economic Contest organized by the Polish Economic Society, by conducting trainings under the patronage of the National Bank of Poland, Office of the Kujawsko-Pomorskie Voivodeship Governor, or within the scope of the *EFCB certificate (European Foundation Certificate in Banking*). I also conduct (or conducted) didactic classes in finance, financial security, economic security in the BA, MA and post-graduate programs offered by the Nicolaus Copernicus University in Torun, Wyższa Szkoła Bankowa, Wyższa Szkoła Gospodarki, Toruńska Szkoła Wyższa and Wyższa Szkoła Administracji i Biznesu (appendix 4.15). I actively use modern technology in the teaching process. I am an author of e-learning courses which are used in the majority of my didactic classes. I have also conducted e-learning courses and I am an e-learning content author for the pilot project called Distance Learning of Banking and Accounting (appendix 4.16).

I engage in organizational activities. I was a member of the Budget Committee at the Faculty of Political Sciences and International Studies of the Nicolaus Copernicus University in Torun, a member of the Dismissal Disciplinary Board for Students at the NCU in Torun, a tutor for the first-year students of International Studies at the NCU in Torun. I have also prepared schedules and supervised their implementation (appendix 4.17).

Appendix 4.18 includes copies of certificates of acceptance for publishing of 4 of my articles, and appendix 4.19 includes 11 statements of co-authors of the articles and monographs on my percentage contribution in the creation of these publications.

With regards,

Magdalena Redo