

## *Annex 2. Professional achievements*

### **1. Professional career**

Since the outset of my career I have been involved with the Warsaw School of Economics. This is my cradle and my home institution. I completed my studies in Management and Marketing in 1997 with a distinction and received my Master's Degree in Economics based on my thesis titled *An appraisal of investment attractiveness of the Special Economics Zone Euro-Park Mielec* written under the supervision of dr hab. Zbigniew Dworzecki and refereed by prof. dr hab. Tomasz Szapiro. Apart from its empirical part - partially published in 'Przegląd Organizacji' in 1997 (no. 123 of Annex 3) - the content of my thesis remains to this day, to the best of knowledge and judgment, the most complete monograph (written in Polish) on the economics of special economic zones.

In the same year I commenced my doctoral studies at the Collegium of Economic Analyzes at the Warsaw School of Economics. Dr hab. Elżbieta Adamowicz became my scientific mentor and later introduced me to the Department of Economics I. At the time Professor Janusz Beksiak and Professor Urszula Grzełowska - luminaries of the Warsaw School in Polish Economics, were the anchors of the Department. Under their supervision I ventured into scientific research by participating in statutory research which resulted in a number of independent theoretical and empirical works. Simultaneously, I started teaching at the undergraduate level. Before receiving my doctoral degree I had taught recitations in micro- and macroeconomics at different levels. With time my ties with the Department of Economics I became stronger. In 2001 my temporary, at the time it had already lasted for two years, teaching contract was converted into a full time employment contract. The period of *Lehrjahre* I recall with a reflection familiar to others - let us not forget where we come from as what we went through and who helped us are the sources of our success. Work regime, scientific and research base, and most importantly the approach to and means of analysis of economic phenomena, which I apply to this day, were significantly shaped during seminars and discussions that occurred at the Department. I noticed that years later.

In 2002 the Scientific Council of the Collegium of Economic Analyzes accepted me into Ph.D. candidacy and selected dr hab. Elżbieta Adamowicz as my thesis supervisor. I successfully defended my doctor dissertation entitled *The use of investment tax incentives in the first decade of the transformation in Poland* in February 2003. Prof. dr hab. Joanna Kotowicz-Jawor and prof. dr hab. Jacek Szlachta were the two referees of my dissertation. The Rector of the Warsaw School of Economics recognized my thesis with the Second Degree Award; I was also awarded a scientific scholarship by the Minister of Finance. An extract from my dissertation was published in 'Gospodarka Narodowa' (no. 113 of Annex 3) Having received the degree of doctor of economic sciences I was promoted to Assistant Professor at the Department of Economics I at the Warsaw School of Economics.

A year later I left for a two-month scientific internship at the Department of Economics and Business Law at the University of Goteborg. Władysław Bursztyn - honored with doctor of *honoris causa* degree from that University - who had formerly been employed with the University of Warsaw and later expelled from the University in the aftermath of the March 1968 student unrest was my scientific mentor. A person whom I owe understanding of some of secrets of macroeconomics and ... not only. As a part of his course on macroeconomics I gave a lecture on tax policy. I arranged a visit to Warsaw of Prof. Lenart Hjalmarson (who passed away in 2012) the Dean, at the time, of the Department, and I took under my scientific supervision a student from Gothenburg who was preparing a thesis on the economic transformation in Poland.

In 2010 as a result of tightening cooperation with dr hab. Elżbieta Adamowicz - the leader the Research Institute for Economic Development at the Warsaw School of Economics



- and her research team I left the Department of Economics I for the Institute. Initially I was the Scientific Secretary, and in 2013 I assumed the position of the Deputy Director, which I have held since. My cooperation with the Institute, which was originated long before its formalisation, has given me team work experience. It is needless to say that my team work experience has not been limited to the team of the Institute, but it has involved individuals from other units of the Collegium, especially with the Institute of Econometrics, individuals and entities not affiliated with the Collegium or the Warsaw School of Economics, and other domestic and foreign business cycle research organisations. Specificity of the business activity of the Institute, ie carrying out research on business cycles, with the Institute being regarded as the leading center in Poland, requires, in particular, demonstrating social skills. I want to emphasize their importance as I would like to state that the team identity and awareness - realising that others share similar interest - that the results of our research are socially useful, which is confirmed with the ongoing mass media interest and allows for the dissemination of the research results obtained at the Institute, is what I took away from my experience at the Institute and what is the most precious for me beyond just experience in basic and applied research.

My 1997 acceptance of employment with the Bureau for Tax System Reform, a unit of the Ministry of Finance, later transformed into the Department of Tax System, originated a concurrent path of my professional development. The motive for assuming this job was purely monetary. However, with time I was gaining higher discretion in the choice of assignments, which mostly pertained to the issues of reform of tax administration in Poland. Being the leader of PHARE project #2002/000-196.01.05 "Modernisation of tax revenue collection and tax inspection" turned to be a crucial event. Given limited budget the project only in a narrow scope had an operational character. Rather an identification of the then present day state of the Polish tax administration was its main objective. Nevertheless, my involvement in the project allowed me to recognise the distance between the Polish tax administration and the world's most effective tax administrations. In 2004 in the Ministry of Finance I initiated actions that led to the development of *Vision of the e-Taxes system*, a document defining the desired state of the Polish tax administration. In 2005 I was appointed as a Deputy Director of the Department of the Tax System. I was in charge of tasks leading towards securing EU funds that would allow for the implementation of *Vision ...* After two months I filed my resignation. The Peter Principle that says that in a hierarchical organisation people will tend to be promoted until they reach their *position of incompetence*<sup>1</sup> came to fruition. EU funds were eventually secured, but the original objectives of the project were only partially met. Five years later the Ministry of Finance announced a public tender for the development of a study of 'a conception of a transformation of the Polish tax administration' within the framework of reforms *de facto* fulfilling assumptions and recommendations presented in *Vision ...* My study prepared for the tender received the highest marks and was declared the winning one. Currently the implementation phase of the transformation program unfolds.

## 2. Professional interests

A summary of my professional career reveals that my scientific interests are primarily centered on two topics: the theory and and practice of taxation, including the issue of tax collection, and on business cycles.

My interests in the issues of taxation appeared during the course of writing of my thesis. In my thesis I conjectured that special economic zones (more generally, spatially defined tax expenditures) can reinvigorate - and typically do in Poland - the local economy, but their

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<sup>1</sup> Laurence J. Peter, Raymond Hull, *The Peter principle: Why things always go wrong*, William Morrow & Co., Nowy Jork 1968.



impact on the entire economy remains negligible or is non-existent as the zones do not attract new capital, but rather lead to a reallocation of the existing capital or attract capital originally designated for other areas. My research on the effectiveness of tax breaks for business enterprises was continued in the subsequent years and eventually culminated in my doctoral thesis. I was in vain a pursuit of the evidence for expected results of tax incentives such as an increased use of factors of production, and a higher level of economic activity. Invariably I remain of the opinion that tax breaks do not stimulate GDP growth (they are neutral) and lead only to income redistribution. Non-economic effects of tax expenditures are negative. Irrespective of the actual merit of the objections the selectivity of tax incentives generates doubts on the part of the society in the rationality of the state. Anyway, even if one chooses to adhere to the merits of the expansionary role of tax breaks one should simply opt for a reduction of the degree of fiscal stringency.

After the defense of my doctoral dissertation I was engaged in a number of research activities such as the impact of taxes on the distribution of income in Poland (redistributive policy,) the history of taxation in Poland<sup>2</sup> and abroad, conditions for the creation and the development of tax system, and many others. In essence those loose, and seemingly unrelated theoretical and applied studies were a prelude that allowed me to offer my lectures on tax theory. In Poland elements of tax theory are normally presented as parts of macro- and micro-, and public economics courses. The Polish institutions of higher learning rarely offer separate courses utilizing mathematical methods comprising numerous tax issues such as tax incidence, optimal taxation, taxation technique, and international tax competition. I developed such a course - similar to those offered abroad - and have been offering at the Warsaw School of Economics for a number of years, now. My new experience gained in research projects in which I am currently involved allows me for further enhancement of the content of my course. In the project entitled 'A Modeling Analysis of the Integration of Fiscal Policy in the UE at a Time of a Debt Crisis' we examine the direct economic effects of different forms of fiscal integration (personal income tax base harmonisation, complete harmonisation of indirect taxes, central-UE level income redistribution, financial transaction taxes), taking into account the postulates of the new economic geography and the hypothesis of fiscal solvency. In turn, in the project 'Preventing the Aging of the Society with Fiscal and Immigration Policies' we postulate that there exists a possibility to design a policy that fosters the growth in the fertility rate up to the level that ensures a simple generational replacement, which costs less than cost of the current programs that support families today such as tax breaks (joint taxation of couples) and transfers. In the short run such a policy is more expensive than the support for permanent immigration, but in the long run it is more effective in the demographic sense, ie it is more effective in preventing the aging of the societies.

I hold on to an intention to utilise my experience gained during the course of my lectures, to use gathered and developed auxiliary materials in the process of preparation of an academic script on the theory of taxation. As, in fact, there is no book in Polish, in English the options remain limited as well, that could be recommended without discomfort to students. Tax collection is a separate topic of interests of mine. The issue, contrary to what may appear, is a relatively complex one. It comprises of the problems of organisation and functioning of tax administration, of shaping the attitudes of the taxpayers (tax compliance), fundamentally affecting the propensity towards payment of tax liabilities, and countervailing the negative attitudes of taxpayers (tax noncompliance), mainly consisting in avoiding and evading from tax liabilities. In economic literature only the last two issues are modeled explicitly. The issue

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<sup>2</sup> The history of taxation in Poland is the hobby I cherish. So far I have described the times until the year 1374 which marked with a breakthrough in the history of the Polish Treasury (1374 was the year the nobility gained a right to object to any new taxes levied by the king, analogously to the clause 12 of Magna Carta of 1215). I want to finish the book and publish it, disclosing this fascinating, albeit hardly known chapter of the history of Poland.



of the functioning of tax administration is left to the management sciences. Whereas in fact all three issues are closely interconnected. The arrangement of the tax apparatus affects the behaviour of taxpayers and leads to a cost, which substitutes the costs on the part of taxpayers (tax compliance.) A consideration of any of those problems in isolation leads to an errors in the assessment of the effectiveness of tax collection, whereas understanding of the interdependence between tax administration and a taxpayer is a prerequisite for the proper functioning. I have been, without a spectacular success, trying to convince the authorities that numerous activities of the tax administration are carried out in vain. Specifically, there is no need to verify whether the liability declared (a subjective criterion) is equal to the actual payment received. Instead it should be verified whether the actual payment made corresponds to the actual tax liability defined with a tax rate applied to proper tax base (an objective criterion). This discrepancy is called the tax gap, which when adjusted for the administrative costs, and the costs of tax compliance (the costs of tax collection in total) constitutes the true measure of effectiveness of tax collection system. Economisation of tax collection constitutes the key theme of the above mentioned study entitled *Transformation of the Polish tax administration*.

Theory of business cycle and studies on economic cyclical fluctuations constitute the second major strand of my scientific interests. I distinguish three sub-areas of my interests:

- research on business cycles utilising test methods,
- empirical analyses in various areas relying on survey data gathered at the Research Institute for Economic Development,
- quantitative methods in business cycle analyses.

My interests in business cycles originated at the initial stages of my cooperation with dr hab. Elżbieta Adamowicz who also inspired them. At first I focused my attention on methods that allow for time series to filter out the seasonal component and irregular factors, later I moved towards short-term forecasting of economic activity, incl. the logit methods. My research, partially carried out as a part of the statutory and individual research projects, resulted in conference presentations and in numerous published and unpublished manuscripts (no. 90, 109, 111, 117 of Annex 3). Since 2008 dr hab Elżbieta Adamowicz and I have been conducting business surveys of the manufacturing industry, and since 2013 - after the death of prof. dr hab. Eugeniusz Gorzelak who originated the research – business survey in agriculture (in cooperation with dr Piotr Szajner from the Institute of Agriculture and Food Economy in Warsaw). The survey in the manufacturing industry is carried out on monthly basis, and the survey in agriculture with quarterly frequency. Results are published in the form of reports (no. 1-5, 9-23, 30-41, 47058, 63-74, 78-89, and 93-104 of Annex 3) and in informational signals and in press communiques released to mass media<sup>3</sup>. The business surveys have been carried out continuously since 1987. Since that time the Institute has gathered data of a unique character, which allows for broadening of knowledge about the economy and description of the economy that goes beyond what is normally obtained with quantitative data. Analyses of the business surveys data (no. 112, 114, and 121 of Annex 3) reveal that they lead changes in the dynamics of aggregate economic activity in Poland. Activities undertaken within project entitled 'Construction of a System for Analyzing and Reporting the Data Obtained in the Study of Economic Conditions in Industry' served an improvement in the process of survey data processing.

The Institute survey-based business cycle research is carried out in line with the unified within the UE method, which allows for comparative analyses of economic developments at the international level, and of the similarities of cyclical fluctuations, in particular. Recently (since 2009) it has been the principal focus of my research interest. It takes a dual track form;

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<sup>3</sup> For recent ones see <http://kolegia.sgh.waw.pl/pl/KAE/struktura/IRG/media/Strony/default.aspx>.



first of all we (in a team with dr hab. Elżbieta Adamowicz, dr Sławomir Dudek, and Dawid Pachucki) study synchronisation of business cycles, on the other hand we (dr hab. Elżbieta Adamowicz and I) verify the presence of regularities in the course of a business cycle (stylised facts) in the Polish economy. The results are discussed in more detail in the next chapter.

### 3. Achievements specified in Article 16 of the Law on academic degrees and ranks, and on degrees and ranks of the art

I consider the following series of publications being the achievement specified in Article 16 of the Law of 14 March 2003 on academic degrees and ranks, and on degrees and ranks of the art (Journal of Laws 65/595, with amendments):

1. *Synchronizacja cyklu koniunkturalnego polskiej gospodarki z krajami strefy euro w kontekście struktury tych gospodarek [Synchronisation of business cycles of Poland and the euro area and the structural dimensions of the economies]*, in *Raport na temat pełnego uczestnictwa Rzeczypospolitej Polskiej w trzecim etapie Unii Gospodarczej i Walutowej. Projekty badawcze [Report on the Poland's accession to the third stage of EMU. Research projects]*, Part I, Narodowy Bank Polski, Warsaw, 2009, pp. 8-224
2. *Wahania cykliczne w Polsce i strefie euro [Cyclical fluctuations in Poland and the euro area]*, „Prace i Materiały Instytutu Rozwoju Gospodarczego”, no. 89, SGH, Warsaw, 2012
3. *Cyclical fluctuations of business activity in the new EU countries*, „Transformations in Business & Economics”, vol. 10, no. 2A (23A), 2011, pp. 440-451
4. *Zachowania gospodarstw domowych w warunkach zmiennej koniunktury. Polska na tle strefy euro [Households' behaviour under the terms of variable business conditions. Poland against the background of Eurozone]*, „Handel Wewnętrzny”, no. 2 (marzec-kwiecień (A)), 2013, pp. 25-36
5. *Mechanizm rozprzestrzeniania się wahań cyklicznych w Polsce. Prawidłowości empiryczne towarzyszące wahanom cyklicznym [The mechanism of propagation of cyclical fluctuations in Poland. Stylised facts about cyclical fluctuations]*, WSE, Warsaw 2013, partly published under the title of *Stylised facts in cyclical fluctuations of business survey data*, in *Expectations and forecasting*, ed. Konrad Walczyk, „Prace i Materiały Instytutu Rozwoju Gospodarczego SGH”, no. 93, Warsaw, 2013, pp. 123-142

The research on business cycles goes two ways. On one hand, changes of macroeconomic variables and business indicators are analysed in order to examine their effect on fluctuations of general business activity. On the other, theories are elaborated to find the causes of cyclical fluctuations and the mechanism of their propagation. I constantly follow the former way of thinking, called the traditional approach. It refers to the Mitchell's (1927) definition of a business cycle<sup>4</sup>, later developed with Burns. According to this definition, *business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximating their own*<sup>5</sup>. So, the classic definition underlines co-movement and links between different variables, in which economic activity measurably manifests, volatility of subsequent phases of a cycle and the fact that the fluctuations occur in

<sup>4</sup> Wesley C. Mitchell, *Business cycles: the problem and its setting*, National Bureau of Economic Research, Nowy Jork 1927, s. 468.

<sup>5</sup> Arthur F. Burns, Wesley C. Mitchell, *Measuring business cycles*, National Bureau of Economic Research, Nowy Jork 1946, s. 3.



various sections of an economy and successively embrace it all. Business cycles are not directly observable. The approach of Burns and Mitchell to analyse business cycles requires not only to take into account changes of particular variables synthetically measuring economic activity but also to study relations between them. It means that a business cycle cannot be described by simple mathematic equations. The approach has been criticised as being technical and with no theoretical background ('measurement without theory'). In late 60's and 70's economies experienced milder recessions and longer expansions. This called for redefining the classic business cycle. The new concept, a growth cycle, bases on the distinction between 'tendencies' and 'deviations'. There are two approaches to analyse growth cycles<sup>6</sup>. The first one focuses on fluctuations of aggregated economic activity from its long-term trend (a deviation cycle). The second approach examines changes of the growth rates of each macroeconomic variables. To explore growth cycles specific statistical and econometric methods and tools are used. Contrary to the classic approach it is necessary to separate the trend and the factor that is responsible for fluctuations from the trend.

The business cycle analysis is a multi-stage process that consists of:

- identifying the key determinants of business tendency,
- time series decomposition,
- quantification of cyclical fluctuations,
- synthesis of results.

It is hard to find examples of full systematic approach to analyse business cycles in contemporary economic literature. Researchers tend to develop particular quantitative methods and partial analysis, however there are neither handbooks nor compendia on the subject, and profound and economy-wide empirical work is scarce. As far as Poland is considered, two papers by Adamowicz, Dudek, Pachucki and me, namely *Synchronisation of business cycles of Poland and the euro area and the structural dimensions of the economies* and *Cyclical fluctuations in Poland and the euro area* (no. 44 and 91 of Annex 3), stand out amongst works of Skrzypczyński, Konopczak, Barczyk *et al.*, Bruzda, Gradzewicz *et al.*, Skrzypczyńska, Wyrobek and Stańczyk<sup>7</sup>.

The first paper analyses deviation cycles of GDP, capital accumulation, household consumption expenditure, sold manufacturing production, GDP deflator, inflation rate (HICP), unemployment rate, industrial confidence indicator, consumer confidence indicator, economic sentiment indicator, and capacity utilisation rate recorded by manufacturing business surveys, for Poland, France, Spain, Ireland, Germany, Portugal and Italy. The gross series deseasonalised and smoothed by TRAMO-SEATS. In order to check whether a method of filtering out cyclical components influence the timing of turning points we tested four extraction methods: the Baxter-King filter, the Christiano-Fitzgerald filter, the

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<sup>6</sup> Ilse Mintz, *Dating postwar business cycles: Methods and their applications to Western Germany, 1950-1967*, National Bureau of Economic Research, Cambridge 1969, s. 12-14.

<sup>7</sup> Paweł Skrzypczyński (2008), *Wahania aktywności gospodarczej w Polsce i strefie euro*, „Materiały i Studia”, nr 227, National Bank of Poland, Warsaw; Karolina Konopczak (2008), *Analiza zbieżności cyklu koniunkturalnego gospodarki polskiej ze strefą euro na tle krajów Europy Środkowo-Wschodniej oraz państw członkowskich strefy*, in: *Raport na temat pełnego uczestnictwa Rzeczypospolitej Polskiej w trzecim etapie Unii Gospodarczej i walutowej. Projekty badawcze, część III*, National Bank of Poland, Warsaw, s. 58-105; Ryszard Barczyk, Karolina Konopczak, Marek Lubiński, Krzysztof Marczewski (2010), *Synchronizacja wahań koniunkturalnych. Mechanizmy i konsekwencje*, Economic University of Poznan, Poznan; Joanna Bruzda (2011), *Business cycle synchronization according to wavelets - the case of Poland and the euro zone member countries*, „Bank i Kredyt”, no. 3 (42), pp. 5-32; Michał Gradzewicz, Jakub Growiec, Jan Hagemeyer, Piotr Popowski (2010), *Cykl koniunkturalny w Polsce – wnioski z analizy spektralnej*, „Bank i Kredyt”, no. 5 (41), pp. 41-76; Marta Skrzypczyńska (2011), *Pomiar cyklu koniunkturalnego w Polsce – analiza porównawcza*, „Bank i Kredyt”, no. 4 (42), pp. 31-53; Joanna M. Wyrobek, Zbigniew Stańczyk (2012), *Business cycle synchronization in Poland, the euro zone and new member states of the European Union*, SSRN: <http://ssrn.com/abstract=2028639> or <http://dx.doi.org/10.2139/ssrn.2028639>.



Hodrick-Prescott filter and the structural time series model. Having estimated the cyclical components (BK, ChF, HP and ST) we studied synchronisation of business cycles between Poland and the other countries as well as the entire euro area. We applied the following methods for time series analyses:

- graphical analysis,
- cross-spectral (frequency-domain) analysis (the coherence coefficient and the phase shift),
- correlation and cross-correlation analysis,
- the Harding-Pagan's concordance index,
- turning points analysis with the modified Bry-Boschan technique,
- recursive correlation analysis (with a moving window),
- the dynamic factor model specified by Forni *et al.*,
- the Boone's dynamic correlation coefficient (for GDP only).

The second paper covers a wider selection of economies (incl. The Czech Republic, Estonia, Greece, Lithuania, Latvia, Slovakia and Hungary) and more sectoral variables (construction production, retail trade, construction confidence indicator and retail confidence indicator), and gives further insight into the morphology of cyclical fluctuations, making a distinction between upward phases (from a lower turning point to a peak, T-P) and downward phases (from an upper turning point to a trough, P-T). For each cyclical component we calculated:

- a) duration of each phase, mean duration of upward phases, mean duration of downward phases, and mean duration of phases,
- b) maximum and minimum values, standard deviation, amplitude (absolute difference between maximum and minimum values) of each phase, mean amplitude of upward phases, mean amplitude of downward phases, and intensity measured as the amplitude *per* unit of time (month or quarter).

Both research studies aim to determine a degree of synchronisation of business cycles in Poland and the selected EU member states in reference to business cycles in the entire euro area as well as to verify whether this synchronisation (if any) increases in time. The wide selection of quantitative and qualitative macroeconomic variables made it possible to identify not only aggregate cyclical fluctuations manifested in behaviour of the cyclical component of GDP but also specific cycles observed in the major industries of the economies (supply side) and in the two primary components of the final aggregate demand: private consumption and investment. The comparison of volatility of quantitative data and the corresponding business and consumer survey indicators validated diagnostic and prognostic power of the latter. We found explicit cyclical fluctuations in GDP and the other indicators of production and demand in all the analysed countries, and distinct though varying synchronisation of business cycles in the economies in reference to the eurozone. The deviation cycles were found in the dynamics of all the variables, however their morphological characteristics is, in the nature of things, diversified. The studies show high sensitivity of the confidence and sentiment indicators to changes of economic activity as well as their leading behaviour. Although there were found some differences in performance of the cyclical components between the individual EU economies the analysis confirmed high synchronisation of cyclical fluctuations within the economically integrated area, esp. within the eurozone. It also showed considerable dependance of the new member states, incl. Poland, on changes of business situation in the euro area, especially in its largest economies: Germany, France and Italy. We also found a general tendency of business cycles to become more synchronised as the economic integration processes advance, tending to form a unified growth cycle. We don't however expect that such a cycle will ever originate, not least because the structures of the European economies and their policies differ from each other. As a matter of fact we seek the composition of gross



value added, household consumption and capital accumulation to crucially influence synchronisation of business cycles across the EU countries. This finding is concordant with the alleged relationship between structures of production and demand and the way economies react to external shocks that cause business activity to cyclically fluctuate. We cannot however confirm that synchronisation of business cycles increases as the economies get more and more structurally similar (no dynamic correlation). It seems to be due to the fact that the period under the study was not long enough to reveal any significant structural shifts. Nevertheless, the conclusions drawn from the correlation analysis of economic structures and synchronisation of business cycles might be useful in examination both economic growth and business cycles. We know, for instance, that quite high immunity of the Polish economy to external disturbances results from relatively high share of internal demand for domestic production, diversified structure of production and comparatively low exports.

My contribution to the authorship of the two papers is 25%. It consists of an input into the concept of the research, making the calculations and graphs with regard to the analysis of the structures of the economies, description of the methods applied with regard to the analysis of the structures of the economies, the study of the structural convergence of the economies and its impact on synchronisation of business cycles, interpretation of the results of the morphological and correlation analyses of cyclical fluctuations (with regard to some variables), and an input into final conclusions.

The firm scientific value of the two studies stems from the widely outlined research field and application of modern statistical and econometric methods. I consider them being the most valuable of my achievements for their importance in research on business cycles, which contributes with the systematic analytical approach consistently taken in the later works, eg:

1. *Cyclical fluctuations of business activity in the new EU countries*, written with Elżbieta Adamowicz (no. 45 of Annex 3).
2. *Households' behaviour under the terms of variable business conditions. Poland against the background of Eurozone*, with Sławomir Dudek (no. 27 of Annex 3).
3. *Propagation mechanism of cyclical fluctuations in Poland. Stylised facts about business cycles*, with Elżbieta Adamowicz (no. 3 of Annex 3). This paper was partially published as *Stylised facts in cyclical fluctuations of business survey data* (no. 26 of Annex 3).

In the first article we substituted gross value added for GDP. My contribution to the authorship is 50%. It consists of an input into the concept of the research, description of the data and methods, making the calculations and graphs, interpretation of the results of the morphological and correlation analyses of cyclical fluctuations (with regard to some variables), and an input into final conclusions.

In the second we studied classical cycles in Poland (after the year 1989) which was found in retail trade only. My contribution to the authorship is 50%. It consists of an input into the concept of the research, making the calculations and graphs with regard to the analysis of the growth cycle, interpretation of the results with regard to the analysis of the growth cycle, and an input into final conclusions.

The last paper compares cyclical fluctuations of the sectoral confidence indicators (for manufacturing, construction, motor transport and retail trade), based on the RIED and MTI business surveys, with the cyclical components of aggregate economic activity (GDP), sold manufacturing production and retail sales. We managed to bring up to date the chronology of the GDP growth cycle in Poland and its morphological characteristics, determine the role of manufacturing, construction, transport and retail trade in shaping business cycles, confirm the leading nature of some sectoral business confidence indicators (esp. ICI and CCI) against the dynamics of GDP and industrial and construction production. The scientific and cognitive



value of the study is that we validated specific regularities of business cycles (stylised facts) and found business survey data useful in evaluating changes of economic activity.

My contribution to the authorship of the paper is 50%. It consists of an input into the concept of the research, description of the data and methods, making the calculations and graphs, interpretation of the results of the morphological and correlation analyses of cyclical fluctuations (with regard to some variables), and an input into final conclusions.

Regardless of the above mentioned papers, I consider the work of my own, titled *Transformation of the Polish tax administration*, being the achievement specified in Article 16 of the Law of 14 March 2003. It is especially important to me for two reasons. First, it completes several years of satisfying work on modernisation of the Polish tax administration. Second, the reform of the tax administration that is taking place in Poland now is being carried out to a large degree according to *Transformation ...*<sup>8</sup>.

*Transformation ...* is not strictly and solely a treatise or even an essay but rather an eclectic work merging elements of economics of tax collection, business management and organisation, project management, business informatics, among others. It comprises of assumptions taken to work out the concept of the transformation, analysis of its economic and social determinants, 'as is' analysis, incl. comparative analysis, a preliminary strategy of the reform, a proposal of the 'as to be' model, a concept of functional, non-functional, organisational and legal solutions, architectural and business principles, a strategy of delivery and implementation of the proposed model, analysis of key links, limitations and exclusions from the scope of the Program, identification of threats, strategic and financial justification of the model and a businessplan. I proposed the transformation process of the tax administration be based on the concept of the enterprise architecture. It consists of a description of 'the state of the art' and the target in four domains (business, information, application and technology) as well as a plan of transition to the starting point to the target and architectural principles controlling for the transition process. My idea was to adopt and constantly execute so called business principles (optimisation of tax system, tax collection cost minimisation, efficient tax risk management and effective tax compliance strategy) drawn from the criterion (paradigm) of the economic effectiveness. The way of thinking about management of the tax collection system in Poland (and public management in general) is casual, partial and subject to current political interests. Although I have no illusions that the running transformation process will change this perspective, I sought the decision to implement the model described in *Transformation ...* to be evidence of rising awareness of necessary reevaluation of public management. This is a practical value of *Transformation ...*. The scientific value lies in formulation of the general problem of tax administration by linking together the three partial theoretical problems: what a tax collection system should be, how to influence tax compliance and handle tax non-compliance.

#### 4. Other achievements

A valuable experience of my career was participation in the international project called ProAct. It was a research project aiming at raising efficiency of innovation policy institutions of the least economically developed regions of the European Union, namely: Podkarpacie, Southern Moravia, Northern Hungary and the Prešov region, through exchange of best practices from the most developed cities and regions of Leiden, South Eastern England, North

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<sup>8</sup> As mentioned above (pp. 2 & 4), *Transformation ...* was submitted to the public tender anonymously and not directly by me as, according to the strict tender regulations (which privileged large international consulting firms), only specified entities were entitled to participate. *Transformation ...* was published by the Ministry of Finance on its website just after the results of the competition had been announced and removed as soon as the implementation phase of the e-Taxes Program started. The gross price was classified and contributed into the final assessment of the offer in 20%.



Denmark and Vienna. The participants were supposed to develop guidelines of such a policy. The aim was accomplished by reviewing those methods and tools of regional innovation policy that proved effective in the mentioned 'old' EU member states, and – on the basis of this – by inaugurating a dialogue and cooperation between regional authorities participating in the project. We elaborated methodology of benchmarking regional innovation policy (no. 106 of Annex 3) which was tested and implemented<sup>9</sup>. A part of the project was the analysis of regional research and development policy in Poland.

Other achievements include:

1. Authorship, co-authorship and editing of 123 publications, 20 unpublished papers and 9 expertises.
2. Papers presented at 29 scientific conferences, of which 11 were international. I co-organised 2 conferences.
3. Participation in 30 research projects, of which 2 were international. I led (am leading) 11 of them, of which 1 was international.
4. Membership in 3 editorial committees.
5. 5 awards for scientific research activity, of which 2 were individual.

A handwritten signature in black ink, appearing to be 'Muel' followed by a stylized flourish.

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<sup>9</sup> More on this in the article titled *ProAct – description of the project* (no. 107 of Annex 3).