



CRACOW
UNIVERSITY
OF ECONOMICS



EXPECTATIONS AND CHALLENGES OF MODERN ECONOMY AND ENTERPRISES

PROBLEMS – CONCEPTS – ACTIVITIES

EDITED BY

JAROSŁAW KACZMAREK, KATARZYNA ŻMIJA

EXPECTATIONS AND CHALLENGES OF MODERN ECONOMY AND ENTERPRISES

Problems – Concepts – Activities

CRACOW UNIVERSITY OF ECONOMICS
Department of Economics and Organization of Enterprises
FOUNDATION OF THE CRACOW UNIVERSITY OF ECONOMICS

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Edited by
Jarosław Kaczmarek, Katarzyna Żmija

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Reviewer

Piotr Bartkowiak

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TABLE OF CONTENTS

INTRODUCTION	9
--------------------	---

PART I

PRINCIPLES OF THE ECONOMIC SYSTEM AND SUSTAINABLE DEVELOPMENT

CHAPTER 1

Marta Najda-Janoszka

UNDERSTANDING DYNAMIC CAPABILITIES – DEVELOPMENT PATTERNS	15
---	----

CHAPTER 2

Andriy Luchakivskyi

BANKING INSTITUTIONS FINANCIAL STABILITY ASSESSMENT BY MEANS OF INTEGRAL CALCULUS	23
--	----

CHAPTER 3

Marianna Księżyk, Marek Michalski

DIVERSITY OF LABOR COSTS AND ITS IMPLICATIONS FOR ATTAINING SUSTAINABLE DEVELOPMENT IN EU COUNTRIES	33
--	----

CHAPTER 4

Maria Sierpińska, Beata Kulisa

THE LEVEL OF MINIMUM WAGES IN POLAND AS COMPARED TO OTHER COUNTRIES	43
---	----

CHAPTER 5

Marta Kołodziej-Hajdo

INSTITUTIONAL AND LEGAL CONDITIONS OF PUBLIC–PRIVATE PARTNERSHIP IN POLAND. . . .	57
---	----

CHAPTER 6*Małgorzata Rutkowska-Podolowska, Anna Kowalska-Pyzalska, Nina Szczygiel*

ECO-INNOVATIVE SUSTAINABLE INVESTMENTS AND A POTENTIAL OF ENVIRONMENTAL INSURANCE	67
---	----

CHAPTER 7*Paweł Frączek*

CONDITIONS FOR LITHUANIA'S ENERGY SECURITY	75
--	----

PART II

■

**EFFECTIVENESS, BUSINESS VALUATION
AND FINANCING OF ENTERPRISES**

CHAPTER 8*Jarosław Kaczmarek*

DEVELOPMENT, EFFECTIVENESS AND VALUE OF ENTERPRISE – UNITY OR PROXIMITY OF PURPOSES, ACTIVITIES AND MEASURES OF ASSESSMENT	85
--	----

CHAPTER 9*Katarzyna Byrka-Kita*

PRIVATE BENEFITS OF CONTROL IN BUSINESS VALUATION AS A SOURCE OF DISPUTES BETWEEN SHAREHOLDERS	95
--	----

CHAPTER 10*Ryszard Węgrzyn*

INFLUENCE OF INTEREST RATE AND TRANSACTION COSTS ON THE P&L PROFILES OF OPTIONS	107
---	-----

CHAPTER 11*Maciej Woźniak*

ACCESS OF ENTERPRISES TO BANK CREDIT IN POLAND BEFORE AND AFTER ECONOMIC CRISES	117
---	-----

CHAPTER 12*Katarzyna Łach*

SOURCES OF FINANCING MICRO-ENTERPRISES IN POLAND DURING THE CRISIS	125
--	-----

CHAPTER 13*Olga Shvets*

THEORETICAL ASPECTS OF CREDIT RISK CONTROL IN COMMERCIAL BANKS	143
--	-----

PART III

**INTERNATIONALISATION AND INNOVATION
AS A WAY OF ENTERPRISE DEVELOPMENT**

CHAPTER 14*Katarzyna Koziol-Nadolna*

THE DEVELOPMENT OF THE INTERNATIONALISATION OF R&D IN THE MODERN ECONOMY .	153
--	-----

CHAPTER 15*Joanna Kurowska-Pysz*

DEVELOPMENT OF ENTERPRISE INNOVATION THROUGH THE USE OF EU FUNDS	161
--	-----

CHAPTER 16*Izabela Konieczna*

FEATURES OF THE OFFER IN THE SPHERE OF INNOVATION AND R&D – THEIR IMPORTANCE FROM THE POINT OF VIEW OF THE CUSTOMER IN THE ASSESSMENT OF DAIRY COOPERATIVES FROM THE ŚWIĘTOKRZYSKIE PROVINCE	173
--	-----

CHAPTER 17*Sylwia Kowalska, Sylwia Łęgowik-Świącik, Małgorzata Kuraś*

THE QUALITY OR THE PRICE – THE FACTORS BUILDING COMPETITIVE POSITION OF MSMEs ON THE MARKET	181
--	-----

CHAPTER 18*Marzena Frankowska*

CLUSTER–SOURCING – THE CONCEPT OF ENHANCING INTERNATIONALIZATION AND EFFICIENCY OF CLUSTER COMPANIES	193
---	-----

PART IV

SELECTED PROBLEMS IN THE PRACTISE OF THE FUNCTIONING OF ENTERPRISES AND REGIONS

CHAPTER 19

Beata Skowron-Grabowska, Marek Dziura

EU PROJECTS AND DEVELOPMENT OF TRANSPORTATION IN POLAND 205

CHAPTER 20

Joanna Nowakowska-Grunt, Katarzyna Żmija

SELECTED DETERMINANTS OF THE ABSORPTION OF EU FUNDS IN THE OPINION
OF MICROENTREPRENEURS 215

CHAPTER 21

Nicola Rappazzo, Salvatore Sidoti

PUBLIC RESEARCH SPIN-OFF FIRMS: SOME EMPIRICAL EVIDENCE FROM SICILIAN
UNIVERSITIES 227

CHAPTER 22

Zbigniew Makiela

THE NETWORK STRUCTURE: THE MANAGEMENT INFRASTRUCTURE OF AN INNOVATIVE
CITY AND REGION 237

CHAPTER 23

Grażyna Plichta

TRUST AS A FACTOR DETERMINING THE CO-CREATION OF VALUE IN TRANSACTIONS
CONCLUDED VIA THE INTERNET 245

CHAPTER 24

Paweł Mucha

ENTREPRENEURSHIP AS A FORM OF STIMULATION TO VOCATIONAL DEVELOPMENT
OF VOCATIONAL SCHOOL STUDENTS 253

INTRODUCTION

The processes of changes taking place nowadays are setting new conditions and paths of development for economies and enterprises. What has become their special distinguishing feature are crisis phenomena proceeding at great speed and with great intensity – specific “storms” only escalating the state of permanent recession. Entering the third phase of transformations in the form of information society is bringing permanent and fast–spreading access to information and enables data transfer, and knowledge and information are becoming critical factors in achieving success and key strategic resources. The observed transformation is becoming, in accordance with A. Toffler’s concept, the third wave (the post–industrial era) which, interfering with the previous one (the industrial era) at the outset, will cover it completely. The new economy, according to D. Tapscott and A.D. Williams, is characterised by: openness, peering, sharing and acting globally.

By questioning the effectiveness of numerous theories and practical activities, the new characteristics have destroyed irreversibly, as it seems, the previous conditions and factors of development. Their considerable force has made economies and enterprises lose balance and numerous fall out from the outlined paths of development. In the process of searching for explanations, new economic theories and models are formulated.

As A. Wojtyna observes, recently there has been an increase in the diversity of economic theories, because of which economics is currently at the turning point. The differentiation of theories does not mean plurality. Theoretical plurality manifests itself in the plurality of methods or concepts when explaining empirical phenomena. Theoretical monism is its opposite. It is a principle according to which the stability of a given theoretical structure is the basic value and only the occurrence of empirical phenomena contrary to the existing theory may be the cause of its change.

As Z. Hockuba points out, the differentiation of economic theories was initiated along with its “opening” to research streams previously belonging to economic heterodoxy, namely behavioural economics, institutional economics, complexity economics and the economics of chaos. As Ł. Hardt claims, the growth of the diversity in economics expresses itself in an increase in its scope, which means embracing a broader and broader variety of empirical phenomena, so far not described with methods inherent to economics – the extension of so–called *explanandum* takes place. According to D.C. North, a methodological ideal, however, is a situation in which the growing *explanandum* corresponds to the decreasing *explanans*, that is when a greater and greater variety of empirical phenomena can be explained with the use of a simpler and simpler (less complex) theory. In the mainstream economics the manifestation of this trend is the expansion of the domain of economics towards “soft” sciences – humanities and social sciences, and “hardening” of its method – by using the achievements of “hard” sciences, namely exact and experimental sciences.

Also the discussion whether the crisis of contemporary economy is the sign of dysfunction of economy itself or of some streams of economics, too has become more heated at present. The leading critique conducted by P. Krugman proves the other view – the fundamental assumptions of neoclassical economics based on the idea of rational behaviours of investors and consumers, as well as the assumptions of the classical finance theory did not work. Behavioural finance, that is “the new finance”, is emerging, paying attention to cognitive limitations of human mind in the process of perceiving and processing information,

questioning the rational expectations theory and the efficient market theory by E. Fama. In the crisis prevention also the monetarist doctrine has failed, and the neoclassical macroeconomics thesis proclaiming that recessions serve economy is an optimum reaction to the fluctuations of the progress speed.

In response to the objections, the representatives of the neoclassical stream, J. Cochrane, E.C Prescott and K. Levine, point out that the neokeynesian model postulated in the economic policy, for which P. Krugman is actually responsible, has failed – the behavioural approach becomes a strong argument against regulation and control. Regulators are as irrational as the remaining market participants.

In the face of this criticism, the postulate of changing the paradigm prevailing in economics is proclaimed, which is particularly stressed by J. Stiglitz. The new stream, called information economics, will constitute, according to him, a turn in economics, expressing itself in challenging A. Smith's theory about the role of the market and the state in regulating economy. The assumption that competitive economies will go, as if under the influence of "the invisible hand of the market", towards the effective (in the sense of V. Pareto) allocation of resources and that such a state can be achieved owing to the operation of the competition mechanism – provided that an adequate, one-time redistribution of income will be conducted – does not find confirmation in real contemporary economies.

However, the thesis of P. Duhem and W. Quine proves that the discrepancy between the reality and the valid theory is difficult to verify because the whole *explanans* of economics should be then submitted to the falsification test, namely not only a specific hypothesis but also the auxiliary theorems. Therefore, it means that the theoretical monism in economics limits the possibility to change the paradigm and to solve major controversies in economics – monetarism and keynesianism. Thus, the observed growth of the diversity in the economic theories should be regarded as the contribution to its development.

Progressing rapidly, at great speed and intensity, social, economic, demographic and technological transformations, which become intense in the face of the crisis time phenomena, have destroyed the hitherto conditions and factors of development. It brings about the necessity and the need to adapt economies and their entities to the new situation. As it was indicated above, in the process of searching for new paths of development of economies and their entities, new opinions and assessments, concepts and theories, as well as the directions and strategies of changes are formed. They constitute the centre of interest and the conceptual framework of the book entitled "Expectations and Challenges of Modern Economy and Enterprises. Problems – Concepts – Activities". It determines the structure filled with contents which logically and precisely reveal the quality of the coherence of the undertaken problems. As scientific editors we expect and hope that the book presented to the Readers will be one of many important publications, broadening the knowledge about the transformations of contemporary economies and enterprises, creating competitive advantage with the use of innovations, internationalisation of activities and knowledge resources, as well as within the scope of the analysis of the essence of their functioning.

The entirety of the Authors' deliberations is divided into four thematic parts, logically and precisely interrelated:

- I. Principles of the economic system and sustainable development.
- II. Effectiveness, business valuation and financing of enterprises.
- III. Internationalisation and innovation as a way of enterprise development.
- IV. Selected problems in the practise of the functioning of enterprises and regions.

The first part of the book opens with the deliberations by Marta Najda-Janoszka, which comprehensively explain how dynamic capabilities are created and developed. The paper therefore aims to contribute to theory by discussing the problem of the dynamic capability development on the basis of the capability lifecycle concept. Then, there is an article by Andriy Luchakivskyi in which the Author claims that the main problem in assessing banks' financial stability is the absence of a single indicator that could fully integrate in itself both a description of the bank as a dynamic system and the ability to ensure solvency and liquidity of a financial institution at the appropriate level. Other deliberations in this part are oriented around the problem of: the diversity of labour costs and its implications for attaining

sustainable development, the level of minimum wages, institutional and legal conditions of public–private partnership, eco–innovative sustainable investments and also conditions for energy national security.

In the second part of the book, it is worth paying attention to the discussion by Ryszard Węgrzyn concerning the influence of interest rate and transaction costs on the P&L profiles of options. The paper presents the influence of those factors on selected spread, straddle and strangle strategies, using, as an example, the options on the WIG20 index, listed on the Warsaw Stock Exchange. The development, effectiveness and value of enterprise – unity or proximity of purposes, activities and measures of assessment are the subject of the next paper, presented by Jarosław Kaczmarek. In the context of the title, the critical discussion in the paper is the recognition of the creation of the company’s value as a universal and comprehensive measure of the efficiency and development of the company. Further papers in this part of the publication are devoted to the following problems: private benefits of control in business valuation, the access of enterprises to bank credit, the sources of financing micro–enterprises and the theoretical aspects of credit risk control in commercial banks.

The third part of the book opens with a text by Katarzyna Koziol-Nadolna concerning the problem of the development of the internationalisation of R&D in the modern economy. As the Author claims, the following factors – the globalisation of markets because of technological progress, the integration of developed and developing economies, the increasing specialisation in the global chain of values, the internationalisation of science, the international mobility of scientists and their cooperation in branches of science – have influenced this process. The deliberations of the next authors focus respectively on the following issues: the development of enterprise innovation, the factors building competitive position of companies and cluster–sourcing.

The last part of the book consists of deliberations focusing on improving activities in the practice of enterprises and regions. Attention should be paid to the paper by Joanna Nowakowska-Grunt and Katarzyna Żmija concerning selected determinants of the absorption of the EU funds in the opinion of microentrepreneurs. The results of the research allowed to identify both the factors that contribute to and the essential barriers to absorbing investment support from the EU funds for microentrepreneurs on the example of measures which were implemented in the framework of the Rural Development Program. Also the paper by Beata Skowron-Grabowska and Marek Dziura is devoted to the assessment of the use of the EU funds and the related development of transport. Then, Nicola Rappazzo and Salvatore Sidoti present the results of the empirical analysis of the functioning of public research spin–off firms, as a business model useful for exploiting the results of scientific research. The content of this part of the book is also complemented with the findings concerning: the management infrastructure of an innovative city and region, entrepreneurship, vocational education and co–creation of value in transactions concluded via the Internet.

To conclude, it should be mentioned that the book presented to the Readers inscribes into a broad, multi–dimensional analysis of the problem of the functioning of economies and their entities, undertaken in the deliberations and detailed research of the Authors. We may hope that it will also contribute to the creation of new reflections, analyses and a critical discussion on the effectiveness of economy, the effectiveness of economic policies and the functioning of contemporary enterprises. The issues, built into the progressing globalisation processes, the creation of economies of the new economy, turbulence of the environment and uncertainty of the activities of those entities, differentiation of economic theories and posing the fundamental question – whether the crisis of the contemporary economy is a only the sign of its dysfunction or also of the theory of economics, take on a new shape and meaning.

Jarosław Kaczmarek, Katarzyna Żmija

PART I



PRINCIPLES OF THE ECONOMIC SYSTEM AND SUSTAINABLE DEVELOPMENT

Marta Najda-Janoszka
Jagiellonian University in Kraków, Poland

UNDERSTANDING DYNAMIC CAPABILITIES – DEVELOPMENT PATTERNS

Summary

Advances in research have enhanced the operationalization of the concept of dynamic capabilities, yet there are numerous unsolved issues at the micro–foundational level. Although most authors agree that dynamic capabilities are built rather than bought in the market there is a scarcity of studies that explicitly and comprehensively explain how dynamic capabilities are created and developed. The study therefore aims to contribute to theory by discussing the problem of dynamic capability development on the basis of the capability lifecycle concept.

* * *

Introduction

The dynamic capabilities perspective (DCP) is an emerging field of inquiry, still at a relatively early stage of theory development trajectory. Hence, existing literature provides a quite broad spectrum of distinct views on the concept resulting from different research backgrounds of scholars contributing to the field. Nevertheless, a review of available studies on the subject matter suggests a general agreement on the idea that dynamic capabilities involve an intentional reconfiguration of a resource base of an organization. Advances in research have enhanced the operationalization of the concept, yet there are numerous unsolved issues at the micro–foundational level. Although most authors agree that dynamic capabilities are built rather than bought in the market¹ there is a scarcity of studies that explicitly and comprehensively explain how dynamic capabilities are created and developed. The study therefore aims to contribute to theory by discussing the problem of dynamic capability development on the basis of the capability lifecycle concept (CLC) introduced by Helfat and Peteraf². The study is a part of a larger project “Dynamics and determinants of the process of appropriating value from projects implemented in the inter–organizational networks” financed by National Science Centre of Poland (NCN) on the basis of the decision number–2013/11/D/HS4/03965.

¹ R. Makadok, *Toward a synthesis of the resource–based and dynamic–capability views of rent creation*. Strategic Management Journal, 2001, 22, pp. 387–401.

² C.E. Helfat, M.A. Peteraf, *The Dynamic Resource–based View: Capabilities Lifecycles*. Strategic Management Journal, 2003, 24(10), pp. 997–1010.

Definition of dynamic capabilities

Since the seminal article written by Teece, Pisano and Shuen³ dynamic capabilities have been defined according to various approaches. This abundance of definitions is understandable given the relatively early stage of concept development and a growing number of contributions coming from various research areas⁴. According to Madsen⁵ all of those approaches can be categorized into three main types:

- Defining dynamic capabilities through results⁶,
- Defining dynamic capabilities by focusing on the presence of external conditions⁷,
- Defining dynamic capabilities by focusing on activities which make the firm dynamic⁸.

Given that advances in research in large part discarded the initial assumption concerning a direct relationship between dynamic capabilities and firm performance and broadened the scope of potential application of the concept to conditions of relatively stable environments, the latter of abovementioned approaches has become a dominating view in recent studies on dynamic capabilities. Hence, a definition put forward by Helfat et al.⁹ is gaining much support. According to this proposition “a dynamic capability is the capacity of an organization to purposefully create, extend, or modify its resource base”¹⁰. Definition is precise, yet comprehensive enough to capture the very nature of dynamic capabilities. Hence, it clearly differentiates dynamic capabilities from ad hoc initiatives by highlighting the intentionality and patterned character of performed actions. Moreover, by referring to a capacity dynamic capabilities generate only a potential for expected outcomes, thus dynamic capabilities are not synonymous with superior performance. Further, definition leaves open the possibility that organizational changes introduced by dynamic capabilities may be triggered by signals coming from both external and internal environments. Given that the definition proposed by Helfat et al.¹¹ captures all the necessary features of dynamic capabilities in a clear and precise manner it is considered suitable for guiding understanding of the concept in this study.

³ D.J. Teece, D.J., G. Pisano, G., A. Shuen, A. *Dynamic Capabilities and Strategic Management*. Strategic Management Journal, 1997, 18(7), pp. 509–533.

⁴ M. Najda-Janoszka, *Dynamic capabilities: on a developmental path from an approach towards a theory*, /In:/ Kaczmarek J., Krzemiński P. (eds.), *Development, innovation and business potential in view of economic changes*, Cracow, Foundation of Cracow University of Economics, 2015, pp. 27 – 34.

⁵ E.L. Madsen, E.L. *A Dynamic Capability Framework – Generic types of dynamic capabilities and their relationship to entrepreneurship*. /In:/ S. Wall, C. Zimmermann, R. Klingebiel, D. Lange (eds.), *Strategic Reconfigurations: Building Dynamic Capabilities in Rapid-Innovation-Based Industries*. Cheltenham: Edward Elgar, 2010, pp. 223–240.

⁶ D.A. Griffith, M.G. Harvey, *A Resource Perspective of Global Dynamic Capabilities*. Journal of International Business Studies, 2001, 32 (3), pp. 597–606.

⁷ D.J. Teece, G. Pisano, A. Shuen, *Dynamic...*, *op. cit.*; C.L. Wang, P.K. Ahmed, *Dynamic Capabilities: A Review and Research Agenda*, The International Journal of Management Reviews, 2007, 9(1), pp. 31–51.

⁸ I. Barreto, *Dynamic Capabilities: A Review of Past Research and an Agenda for the Future*. Journal of Management, 2010, 36(1), pp. 256–280; S.A. Zahra, H.J. Sapienza, P. Davidsson, *Entrepreneurship and Dynamic Capabilities: A Review, Model and Research Agenda*. Journal of Management Studies, 2006, 43(4), pp. 917–955.

⁹ C.E. Helfat, S. Finkelstein, W. Mitchell, M.A. Peteraf., H. Singh, S.G. Winter, *Dynamic Capabilities: Understanding Strategic Change in Organizations*. Blackwell Publishing: Malden, MA., 2007.

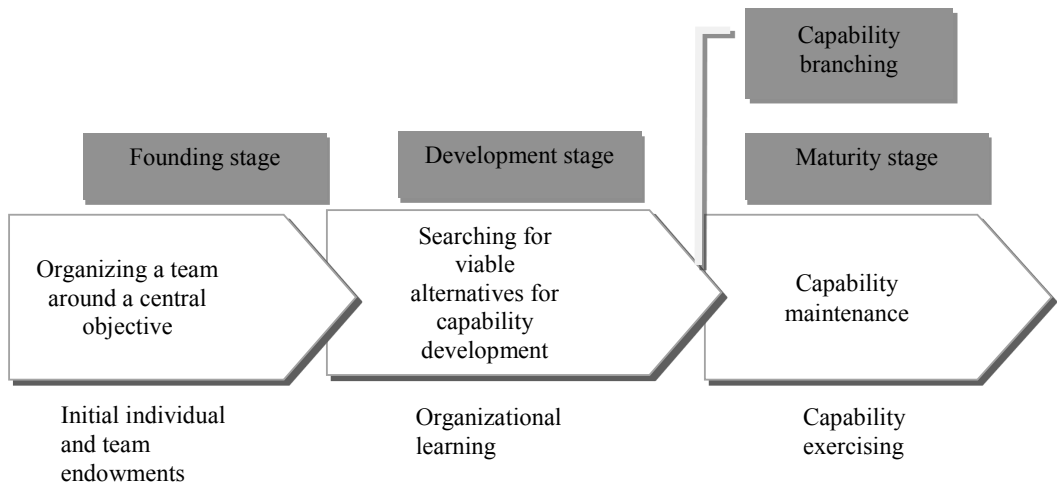
¹⁰ C.E. Helfat, S. Finkelstein, W. Mitchell, M.A. Peteraf., H. Singh, S.G. Winter, *Dynamic...*, *op.cit.* p. 4.

¹¹ C.E. Helfat, S. Finkelstein, W. Mitchell, M. A. Peteraf., H. Singh, S.G. Winter, *Dynamic...*, *op.cit.*

Development trajectories

On the basis of evolutionary economics contribution it is generally assumed that dynamic capabilities are developed through learning mechanisms¹², thus are path-dependent¹³ and embedded in the organization¹⁴. However, the extant literature presents a fragmentary picture of the problem, since discussions are in general not supported by any clear conceptual model providing a common language and logic of capability development. Meanwhile, in order to explain the relationship between organizational capabilities and firm heterogeneity, it is necessary to understand how those capabilities evolve over time and become to a large extent idiosyncratic. Helfat and Peteraf¹⁵ have addressed the need and formulated the concept of capability lifecycle (CLC) by drawing on the logic of product lifecycle. Given that the management scholarship on the DCP does not provide an equally comprehensive alternative, further discussion on the problem of dynamic capability development is based on the CLC concept.

Figure 1. Capability lifecycle



Source: author's own research based on C. E. Helfat, & M. A. Peteraf, *The Dynamic...*, op.cit, pp. 997–1010.

The point of departure for analyzing development patterns of organizational capabilities is an assumption that all capabilities can accommodate change, yet some of them are purposively designed to deal with adaptation and alteration. In other words organizational change may occur with or without intervention of dynamic capabilities. Accordingly, the CLC provides a general framework that describes the development trajectories of any type of organizational capability¹⁶. Conceptualization distinguishes several stages in evolution of organizational capability by referring to the corresponding logic of product life cycle. Such

¹² K.M. Eisenhardt, J.A. Martin, *Dynamic Capabilities: What Are They?* Strategic Management Journal, 2000, 21, pp. 1105–1121.

¹³ D.J. Teece, G. Pisano, A. Shuen, *Dynamic...*, op.cit.; M. Zollo, S.G. Winter, *Deliberate Learning and the Evolution of Dynamic Capabilities*. Organization Science, 2002, 13(3), pp. 339–351.

¹⁴ K.M. Eisenhardt, J.A. Martin, *Dynamic Capabilities...*, op.cit.

¹⁵ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, op.cit.

¹⁶ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, op.cit.

a line of reasoning is supported by the fact that products and capabilities are indeed two sides of the same coin¹⁷. The life cycle of a new capability begins with a founding stage (Fig. 1). Given that intentionality constitutes a key feature of capabilities, the stage starts with an objective the achievement of which involves creation of a capability. Then, the second requirement of the founding stage concerns organizing a group of individuals around that central objective in order to provide the necessary collective-level effort. Formation of teams does not occur in a vacuum. It is strongly affected by organizational history of created and managed processes, systems and structures¹⁸, as well as human and social capital of organized teams¹⁹. Given that the endowments present at the founding stage entail not only tangible inputs but also individual experience, knowledge, skills, social ties, it is argued that those endowments provide important sources of heterogeneity between subsequently developed capabilities²⁰.

Once the team has been organized around the central objective, the development stage of capability evolution begins. According to the CLC concept capability develops through a search for plausible alternatives that would enable achieving the central objective²¹. Teams may generate initial alternatives by considering variations with regard to the types and quantity of resources required, nature and complexity of tasks to be performed, form of a necessary coordination. The range and content of generated propositions is greatly affected by diverse stimuli supplied by external environment, the endowments at founding stage and experience accumulated over time. Consequently, capability development is constrained and guided by past and present actions. Thus, it is possible that generated alternatives may include formerly used solutions and/or involve completely new processes. Pursuing either of available alternatives is challenging, as each proposition entails new sets of activities not practiced by a team. Therefore, during development stage initial alternatives undergo continuous evaluation and improvement until a satisfactory level of skillfulness or technical limits are reached. This improvement path is shaped by organizational learning²². Given that most scholars recognize the underpinning function of organizational learning, available studies present a variety of different perspectives on drivers of successful organizational learning that contribute to development of organizational capabilities²³. Therefore, responding to the need for a coherent and general framework Zollo and Winter²⁴ formulated a recursive cycle of three core learning mechanisms that enhance development of all kinds of capabilities, namely: (1) experience accumulation through repeated execution of similar tasks, (2) knowledge articulation (collective discussions, performance evaluation) that enhances understanding of action–performance links, and (3) knowledge codification that supports the entire knowledge evolution process. This cyclical movement from exploration to exploitation and back again, is triggered by internally and externally generated stimuli. Organizational and external environments provide a substance for critical reflections on current organizational behaviors and possible improvements of performed activities²⁵. Thus, development of a new capability proceeds via an iterative process of trials and revisions based on the feedback and accumulated experience²⁶.

¹⁷ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*, p. 998.

¹⁸ D.J. Teece, *Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance*, *Strategic Management Journal*, 2007, 28(13), pp. 1319–1350.

¹⁹ V. Ambrosini, C. Bowman, *What are dynamic capabilities and are they a useful construct in strategic management?* *International Journal of Management Reviews*, 2009, 11(1), pp. 29–49; C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*

²⁰ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*

²¹ S.G. Winter, *Understanding Dynamic Capabilities*. *Strategic Management Journal*, 2003, 24(10), pp. 991–995; C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*

²² D.J. Teece, G. Pisano, A. Shuen, *Dynamic...*, *op. cit.*; K.M. Eisenhardt, J.A. Martin, *Dynamic Capabilities...*, *op.cit.*; M. Zollo, S.G. Winter, *Deliberate...*, *op.cit.*

²³ P. Cordes–Berszin, *Dynamic capabilities. How Organizational Structures Affect Knowledge Processes*. Palgrave Macmillan: New York, 2013.

²⁴ M. Zollo, S.G. Winter, *Deliberate...*, *op.cit.*

²⁵ M. Zollo, S.G. Winter, *Deliberate...*, *op.cit.*

²⁶ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*

As it was mentioned before at some point continuously developed capability attains a satisfying level of functionality or reaches its technical limits. Then, further development is ceased and capability enters its maturity stage. During that stage the focus is shifted towards maintenance of the capability, that involves its regular exercising. Capabilities that are repeatedly used become more embedded in an organization and less susceptible to organizational forgetting, yet more habitual and tacit in nature²⁷.

A current development trajectory may be either enforced or altered depending on signals coming from internal and external environments. Those signals Helfat and Peteraf²⁸ describe as selection effects. Whether caused by managerial decisions or by changes in demand, technology, lifecycle branch may occur only with regard to activity that “has reached at least a minimum threshold of functionality”²⁹ and can be qualified as capability. Hence, a current trajectory may be altered not only at the maturity stage but also at development stage. Helfat and Peteraf³⁰ distinguished six branches of capability lifecycle, that reflect organizational response to selection effects (Fig. 2): retirement, retrenchment, replication, renewal, redeployment, and recombination. Choice over one or more of available branches at a time depends on the nature of opportunities and threats generated by selection effects. A firm may decide to reduce production or even to shut down the whole production line, when it faces threatening signals from the market that put in question a current level of production. In that situation retirement and retrenchment are viable options, because reduced utilization of a capability inevitably leads to its degradation. However, instead of a gradual or total cessation a firm may also consider replication of the capability in question in other geographical markets, that provide more favorable conditions for carrying out activities. Moreover, disturbing signals from internal and external environments may in fact provide new opportunities for capability growth. Three other branches of renewal, redeployment in different product–markets and recombination involve new development stages, as all imply significant alternations of the capability and thus also require searching for most suitable adaptations and improvements.

According to the concept of CLC, shifts in current development trajectory are always accompanied by some kind of transformation of the original capability. Early conceptualizations of dynamic capabilities assumed a direct link between organizational change and dynamic capabilities, i.e. dynamic capabilities were considered a necessary mechanism to alter operational capabilities. Moreover, the main purpose of dynamic capability was to address a rapid technological change³¹. Further exploration of the field discarded those assumptions and current understanding of the nature and function of dynamic capabilities is clearly reflected in the CLC concept. According to presented framework firms may use dynamic capabilities to introduce changes, however the undertaken course of action may address various events occurring in internal and external environments. It corresponds with an interesting observation made by Eisenhardt and Martin³² that dynamic capabilities apply also to environments with lower rates of change. Authors pointed out that structural patterns of dynamic capabilities depend on the market dynamisms in such a way that in high–velocity markets dynamic capabilities consist of mostly simple and unstable routines, while in moderately dynamic markets those structural patterns become more complicated and detailed³³.

In the CLC concept dynamic capabilities are not considered as indispensable factors determining the evolutionary path of other organizational capabilities³⁴. An overview of the capability lifecycle provides a more clear picture of the scale of efforts required for developing a capability. It is not only time but

²⁷ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*, p. 1003.

²⁸ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*

²⁹ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*, p. 1005.

³⁰ C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op.cit.*

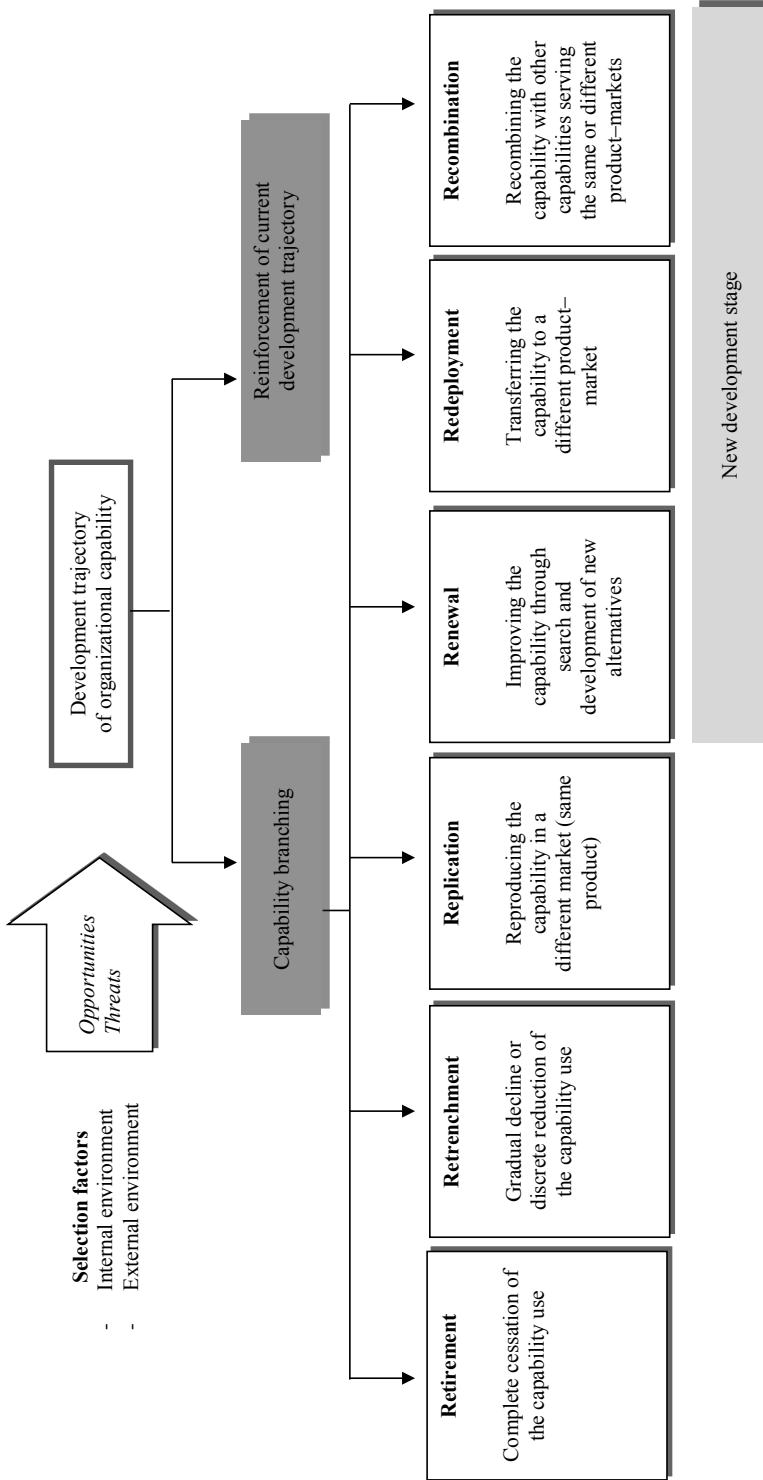
³¹ D.J. Teece, G. Pisano, A. Shuen, *Dynamic...*, *op.cit.*

³² K.M. Eisenhardt, J.A. Martin, *Dynamic Capabilities...*, *op.cit.*

³³ K.M. Eisenhardt, J.A. Martin, *Dynamic Capabilities...*, *op.cit.*

³⁴ S.G. Winter, *Understanding ...*, *op.cit.*; C.E. Helfat, M.A. Peteraf, *The Dynamic...*, *op. cit.*, p. 1008.

Figure 2. Capability branching



Source: author's own research based on C. E. Helfat, & M. A. Peteraf, *The Dynamic...*, op.cit, pp. 997–1010.

also substantial cognitive, managerial and operational costs³⁵. Thus, it can be concluded that dynamic capabilities are not automatically involved in every reaction to environmental change and a decision on development and deployment of dynamic capabilities depends on the balance of costs and benefits derived from their deployment in comparison to other non–routinized responses³⁶. Although the intended function of dynamic capabilities is to facilitate the branching of other capabilities, management may turn to other plausible ways for accommodating change depending on particular circumstances.

Further in this vein, it is worth noting that with regard to path–dependency of dynamic capabilities scholars point at a quite important paradox. On the one hand it is assumed that dynamic capabilities represent the main approach to overcome lock–in situations resulting from path dependencies in organizations³⁷. On the other hand, dynamic capabilities are commonly defined as path–dependent processes, hence are subject to the evolutionary mechanisms of variation–selection–retention and are characterized by three main principles of path–dependent processes: history matters, increasing returns and the risk of lock–in³⁸. Thus, it has been argued that in order to response to unfamiliar triggers an organization needs a frame breaking approach instead of a patterned course of actions³⁹. Thus, such observation brings back the importance of non–routinized, ad–hoc interventions and improvisations in organizational behavior.

Conclusion

The illuminating insights provided by the capability lifecycle framework provide unique perspectives that guide and enhance the reliable theoretical and empirical exploration of the DCP. Acknowledging the critical role of initial endowments, experience accumulation over time and regular practice for capability development and maintenance provides unique opportunity for capturing peculiarities in development trajectories of dynamic capabilities. Thus, the CLC concept allows for investigating salient idiosyncratic properties of development process of a particular capability, yet provides a framework general enough to be relevant across diverse sectoral contexts. Further, the concept enhances understanding of the fact that all capabilities can accommodate change and organizational change may occur with or without intervention of dynamic capabilities. Given the scale of efforts required to develop a capability, firms may turn to ad hoc initiatives in order to response to various internally or externally generated triggers. Recognizing that dynamic capabilities are not indispensable factors determining the evolutionarily path of other organizational capabilities is an important step forward in explaining the relationship between organizational capabilities and firm heterogeneity.

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³⁵ V. Ambrosini, C. Bowman, *What are ..., op. cit.*

³⁶ S.G. Winter, *Understanding ..., op.cit.*

³⁷ D.J. Teece, G. Pisano, A. Shuen, *Dynamic ..., op. cit.*

³⁸ G. Schreyögg, M. Kliesch–Eberl, *How dynamic can organizational capabilities be? Towards a dual–process model of capability mobilization*, Strategic Management Journal, 2007, 28, pp. 913–933; P. Cordes–Berszin, *Dynamic ..., op. cit.*

³⁹ G. Schreyögg, M. Kliesch–Eberl, *How dynamic..., op. cit.*

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Andriy Luchakivskyy

Drohobych Ivan Franko State Pedagogical University, Ukraine

BANKING INSTITUTIONS FINANCIAL STABILITY ASSESSMENT BY MEANS OF INTEGRAL CALCULUS

Summary

The paper runs that the main problem in assessing banks financial stability is absence of a single indicator that could fully integrate in itself both a description of the bank as a dynamic system and the ability to ensure solvency and liquidity of a financial institution at the appropriate level. This is because there is no common understanding of the economic essence of the term “financial stability” in the scientific literature and the term “bank solvency” is often used instead of it. The authors suggest an approach to assess bank financial stability based on a geometric interpretation of an n -fold integral that allows taking into consideration the changes of model parameters at a certain interval. The existing approaches to the analysis of results of stress tests and financial stability usually give a slightly different answer to the question – they do not show the stability, but rather the probability of bank default over a certain time horizon, bank financial situation at a given time, etc. The proposed in the paper measure for financial stability allows through stress scenarios implementation to assess sensitivity of the bank to financial shocks not only in certain discrete changes of external and internal factors, but also by means of integral calculus on arbitrary stress intervals. In the paper, the investigation of bank stability is considered in stress scenarios implementation, namely in changing of these factors values on a certain interval and determining appropriate Z -score assessments (ratio of the amount of return on assets and capital adequacy ratio to standard deviation of return on capital) by means of integral calculus. This approach makes it possible to take into account all possible values of the factors of the so-called stress interval and provide a comprehensive assessment of bank financial stability in the form of a scalar indicator that makes it possible to compare and rate banks performances not only in terms of their profitability or bankruptcy probability, but also their financial stability.

* * *

Introduction

Nowadays there are two major problems in assessing banks financial stability: 1) first, still there is no clear definition of “financial stability” in relation to commercial banks; 2) second, a serious problem in assessing banks financial stability is the absence of a single indicator that would make it possible to

characterize both the adequacy of resources for proper functioning of the institution, the ability to meet its obligations, the level of liquidity of its assets, risk of active and passive transactions and the ability to withstand potential internal and external threats.

The analysis of existing approaches to the analysis of financial stability indicates that they are mostly focused either on finding of bank default probability over a certain time horizon, or on a general analysis of financial situation at a given time. All this makes the need for clarifying the economic essence of the term “financial stability” of the bank and developing new approaches to its assessment in the form of a single scalar indicator that would allow to better assess sensitivity of banking institutions to external and internal factors and compare banks in terms of their stability.

The problem of banks financial stability assessment has been devoted in numerous researches and publications of both foreign and domestic authors, among which we should first of all mention B. Yu. Kyshakevych¹, M. Kokhlyer², L. Baselga-Pascual, A. Trujillo-Ponce, C. Antonio Cardone-Riportella³, A.H. Holovko⁴, L. Lepetit, F. Strobel⁵. Despite the presence of a significant number of theoretical researches from this perspective, many issues associated with the development of real economic and mathematical models for assessment of bank financial stability as a single indicator remain relevant today.

Purpose of the paper is to clarify the economic essence of the term “financial stability” and develop a new approach and appropriate mathematical tools for assessment in the form of a single indicator.

Discussion of the problem

The main problem today in assessing banks financial stability is absence of a single indicator that could fully integrate in itself not only characteristic of the bank as a dynamic system and the ability to ensure solvency and liquidity of financial institutions at the appropriate level, but also the opportunity to consistently perform their basic functions and keep their key characteristics most stable and insensitive to various stress scenarios implementation.

Majority of modern approaches to bank financial stability assessment as a separate parameter can be grouped into two groups of models. The first group is the models that are based on the Altman Z-score methodology; the second group of models is based on the use of the well-known Merton model. These and many other similar analytical approaches based largely on the determination of bank solvency in the period of time being analyzed, its bankruptcy probability, etc. Despite its importance in the analysis of bank financial situation, these indicators, unfortunately, do not give a clear answer on the key question in the form of some scalar measure: how sensitive the bank is to macroeconomic changes, a sudden outflow of deposits, increasing of the so-called “toxic assets” on its balance sheet, or to deterioration of some aspects of activity⁶.

¹ Кишакевич Б.Ю., Интегрально-аналитичний підхід до оцінювання фінансової стійкості банку. Вісник Запорізького національного університету, 2014, No. 4 (24), pp. 75–81.

² Köhler M., *Which banks are more risky? The impact of loan growth and business model on bank risk-taking* [Електронний ресурс] / Discussion Paper Deutsche Bundesbank, 2012, No33, p. 64, Режим доступу: https://www.bundesbank.de/Redaktion/EN/Downloads/Publications/Discussion_Paper_1/2012/2012_12_07_dkp_33.pdf?__blob=publicationFile.

³ Baselga-Pascual L., *Factors Influencing Bank Risk in Europe: Evidence from the Financial Crisis* [Електронний ресурс] / Baselga-Pascual L., Trujillo-Ponce, A., Cardone-Riportella C., September 15, 2014, p. 49, Режим доступу: <http://ssrn.com/abstract=2304160> or <http://dx.doi.org/10.2139/ssrn.2304160>.

⁴ Головко О. *Узагальнена оцінка фінансової стабільності банку: теорія і практика* / Головко О. Г., Олефір С. А., // Вісник університету банківської справи Національного банку України, 2013, No. 3 (18), pp. 153 – 158.

⁵ Lepetit, L., *Bank Insolvency Risk and Z-Score Measures: A Refinement* [Електронний ресурс] // Lepetit, L., Strobel, F., / Finance Research Letters, January 10, 2015, p. 22, Режим доступу: <http://dx.doi.org/10.2139/ssrn.1753735>.

⁶ Кишакевич Б.Ю. Интегрально-аналитичний підхід до оцінювання фінансової стійкості банку. Вісник Запорізького національного університету, 2014, No. 4 (24), p. 78.

Assessment of financial stability involves primarily taking into consideration bank ability to resist the influence of both external and internal factors. Consequently, for financial stability assessment we should develop a scalar indicator, which would simultaneously take into account two key aspects: on the one hand, the ability of the bank as a dynamic system to retain unchanged its main characteristics under various stress scenarios, i.e. insensitivity of indicators to economic shocks and, on the other hand, the level of solvency. Thus, we need to develop a scalar indicator that would accumulate both the ability of the financial institution to provide the necessary solvency, liquidity, maintenance of bank risks at an acceptable level for a successful performance of its functions and the possibility of achieving stability of key financial indicators and maximum insensitivity to stress scenarios implementation.

Let's take Z -score as the baseline that assesses the level of bank solvency. The approach to the assessment of financial stability based on the Z -score models is very convenient, as it allows analyzing the factors on which it depends. Further we will make use of the approach to Z -score bank assessment used by the Deutsche Bundesbank (see ⁷) and Spanish researchers in their findings⁸. We will define Z -score as the ratio of the sum of return on assets and capital adequacy ratio of the bank to the standard deviation of return on capital:

$$Z_{score}^{it} = \frac{ROA_{it} + ROA_{it}}{SDROA_i} \quad (1)$$

where ROA_{it} and ROA_{it} are return on assets and the ratio of capital to i -th bank assets in a year t , respectively. $SDROA_i$ is a standard deviation of return on assets ROA for the entire period being examined.

Let's consider the general case of an n -dimensional econometric model where Z -score is a dependent variable, and $x_j^{it}, i = 1, \dots, n$ are explanatory variables:

$$Z^{it} = a_0 + \sum_{j=1}^n a_j x_j^{it} \quad (2)$$

here Z^{it} is Z -score of i -th bank in a year t , x_j^{it} are interbank and macroeconomic factors and i -th bank in a year t that affect bank solvency.

Assessment of financial stability we will conduct due to consideration of the impact of stress scenarios which lie in deterioration of interbank and macroeconomic factors x_j^{it} on the level of solvency. Existing approaches to banks stress testing are limited by the implementation of one or, at best, several stress scenarios, in which some parameters of the model are changed and which, by having acquired certain discrete values, derive a system of the equilibrium. The analysis of the stability of such a system with the only discrete changes is complete. In the paper we suggest an approach to evaluate sustainability, based on a geometric interpretation of the n -fold integral and which allows taking into consideration the changes of parameters of the model at a certain interval.

The investigation of bank stability will lie in stress scenarios implementation, namely in changing values of factors x_j^{it} at a certain interval and determining the appropriate Z -score assessments by means of integral calculus. This approach will make it possible to take into account all possible values of factors of the so-called stress interval.

We consider first the factors which lead to reduction of deterioration of the bank financial situation. Let R be a set of indices of such factors. Then, for perturbation variables we use the appropriate intervals $[X_j^{it}(1 - \Delta_j); X_j^{it}]_{j \in R}$. Here Δ_j is perturbation parameter of j -th factor, is the current value of the j -th index. Let P be a set of indices factors that increase deterioration of the bank financial situation. In this case, we use the following stress intervals of corresponding variables: . Then, Ω perturbation area of interbank and macroeconomic factors will be as follows:

⁷ Köhler M., *Which banks are more risky? The impact of loan growth and business model on bank risk-taking* [Электронный ресурс] / Discussion Paper Deutsche Bundesbank, 2012, No. 33, p. 64.

⁸ Baselga-Pascual L., *Factors Influencing Bank Risk in Europe: Evidence from the Financial Crisis* [Электронный ресурс] / Baselga-Pascual L., Trujillo-Ponce, A., Cardone-Riportella C., September 15, 2014, p. 49.

$$\Omega = \left([X_j^{it}(1 - \Delta_j); X_j^{it}]_{j \in R}, [X_j^{it}; (1 + \Delta_j)X_j^{it}]_{j \in P} \right), j = 1, \dots, n \quad (3)$$

For financial stability assessment we propose the following measure:

$$Z_{ct}^{it} = Z_{\phi_{\text{акт}}}^{it} \left(\frac{\int_{\Omega} Z^{it}(x_1^{it}, x_2^{it}, \dots, x_n^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}}{\int_{\Omega} Z^{it}(x_1^{it}, x_2^{it}, \dots, x_n^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}} \right) \quad (4)$$

where $Z_{\phi_{\text{акт}}}^{it}$ is the actual value of i -th bank in a year t and is determined according to the formula (1); X_j^{it} – the actual value of of j -th factor of i -th bank in a year t .

Taking into account (2), the ratio (4) takes the following form:

$$Z_{ct}^{it} = Z_{\phi_{\text{акт}}}^{it} \left(\frac{\int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j x_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}}{\int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j X_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}} \right) \quad (5)$$

where $x_i^H = X_j^{it}(1 - \Delta_j)$; $x_i^B = X_j^{it}$ for $j \in R$, $x_j^H = X_j^{it}$; $x_j^B = X_j^{it}(1 + \Delta_j)$ for $j \in P$.

The integral in the numerator is equal to the volume of a vertical cylindrical shape, based on Ω and limited on the top by the part of the surface $Z^{it} = a_0 + \sum_{j=1}^n a_j x_j^{it}$. The numerator denoted by S describes all possible Z -score stress values, when the factors change within the Ω stress field. The denominator is equal to the volume of the cylinder, which is based on Ω and the height $(a_0 + \sum_{j=1}^n a_j X_j^{it})$. It corresponds to a perfect situation, in which the value of Z -score does not decrease due to deterioration of interbank macroeconomic factors. Obviously, the larger the ratio is $\frac{\int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j x_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}}{\int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j X_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}}$, the less sensitive a banking institution will be to all the possible stress scenarios of the Ω field.

Let's introduce the coefficient K_{it} of sensitivity of i -th bank in a year t to stress that depends on $\Delta = (\Delta_1, \Delta_2, \dots, \Delta_n)$ – deterioration maximum percentage of interbank and macroeconomic indicators $x^{it} = (x_1^{it}, x_2^{it}, \dots, x_n^{it})$ and values of corresponding variables $X^{it} = (X_1^{it}, X_2^{it}, \dots, X_n^{it})$:

$$K_{it}(\Delta, X^{it}) = \left(1 - \frac{\int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j x_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}}{\int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j X_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it}} \right) \quad (6)$$

The numerator S_1 can be calculated analytically:

$$\begin{aligned}
 S_1 &= \int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} (a_0 + \sum_{j=1}^n a_j x_j^{it}) dx_1^{it} dx_2^{it} \dots dx_n^{it} = \\
 &a_0 \int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} dx_1^{it} dx_2^{it} \dots dx_n^{it} + \sum_{j=1}^n \int_{x_1^H}^{x_1^B} \int_{x_2^H}^{x_2^B} \dots \int_{x_n^H}^{x_n^B} a_j x_j^{it} dx_1^{it} dx_2^{it} \dots dx_n^{it} = \\
 &\quad a_0 \prod_{i=1}^n (x_i^B - x_i^H) \\
 &+ \sum_{j=1}^n a_j \int_{x_1^H}^{x_1^B} \dots \int_{x_{i-1}^H}^{x_{i-1}^B} \int_{x_{i+1}^H}^{x_{i+1}^B} \dots \int_{x_n^H}^{x_n^B} \frac{[(x_j^B)^2 - (x_j^H)^2]}{2} dx_1^{it} \dots dx_{j-1}^{it} dx_{j+1}^{it} \dots dx_n^{it} = \\
 &= a_0 \prod_{i=1}^n (x_i^B - x_i^H) + \sum_{i=1}^n [\frac{a_i}{2} [(x_i^B)^2 - (x_i^H)^2] \prod_{j \neq i} (x_j^B - x_j^H)] \quad (7)
 \end{aligned}$$

The denominator S_2 in (5) is also available in an analytical form because $a_0 + \sum_{i=1}^n a_i X_i^{it}$ is a constant:

$$S_2 = (a_0 + \sum_{j=1}^n a_j X_j^{it}) \prod_{l=1}^n \Delta_l X_l^{it} \quad (8)$$

To determine Z^{it} we will make use of our built econometric model for Z -score assessment, based on statistic data of the largest banks in Ukraine for the period from 2006 till 2013. Putting as interbank variables the following ones: ratio of loans to deposits ($x_1^{it} = K\mathcal{D}_{it}$), liquidity ($x_2^{it} = \text{Лікв}_{it}$), interest margin ($x_3^{it} = \text{ПМ}_{it}$), return on equity ($x_4^{it} = \text{ROE}_{it}$), bank size ($x_5^{it} = \text{Size}_{it}$), and as macroeconomic variables: the coefficient of ratio of loans to deposits in the banking system ($x_6^{it} = K\mathcal{D}C_{it}$) and inflation level ($x_7^{it} = \text{Infl}_{it}$) we will have:

$$\begin{aligned}
 Z^{it} &= 40,1 - 1,7 \cdot K\mathcal{D}_{it} + 22,6 \cdot \text{Лікв}_{it} + 55,94 \cdot \text{ПМ}_{it} + 7,17 \cdot \text{ROE}_{it} + \\
 &169,82 \cdot \text{Size}_{it} - 4,57 \cdot K\mathcal{D}C_{it} - 29,35 \cdot \text{Infl}_{it} \quad (9)
 \end{aligned}$$

The explanatory variables of the model (9) and the method of their calculation are given in Table 1.

Table 1. Explanatory variables of the model for Z-score assessment

Interbank variables	
Coefficient of ratio of loans to deposits (KД)	$KД = \frac{\text{Loans granted}}{\text{Funds of legal entities} + \text{Funds of individuals}}$
Liquidity (Ликв)	$Ликв = \frac{\text{Highly liquid assets}}{\text{Due to banks} + \text{Funds of legal entities} + \text{Funds of individuals}}$
Bank interest margin (ПМ)	$ПМ = \frac{\text{Net interest income}}{\text{Loans granted}}$
Return on equity of banks in Ukraine (ROE)	$ROE = \frac{\text{Net profit—loss of the bank}}{\text{Total equity}}$
Bank's share in the total assets of the banking system (Size)	$Size = \frac{\text{Bank assets}}{\text{Total assets of banks in Ukraine}}$
Macroeconomic variables	
Coefficient of ratio of loans to deposits in the banking system (KДC)	$KДC = \frac{\text{Loans granted by all banks Ukraine}}{\text{Amount of legal entities and individuals of Ukraine}}$
Inflation (Infl)	The consumer price index in this period compared to the previous

Source: author's own research.

Since Z-score under (9) decreases with decreasing of variables values $x_2^{it} = Ликв_{it}$, $x_3^{it} = ПМ_{it}$, $x_4^{it} = ROE_{it}$, $x_5^{it} = Size_{it}$ then $R = \{2,3,4,5\}$. Similarly, considering the fact that Z-score will decrease with increasing values of variables $x_1^{it} = KД_{it}$, $x_6^{it} = KДC_{it}$, $x_7^{it} = Infl_{it}$ we will have $P = \{1,6,7\}$.

Having substituted relevant data in (6), we obtain the formula to calculate the coefficient of sensitivity to stress K_{it} of i -th bank in a year t :

$$K_{lt}(\Delta, X^{lt}) = 1 - \frac{40,1 \prod_{i=1}^7 \Delta_i X_i^{lt} + \sum_{i \in K} [(X_i^{lt})^2 a_i (\Delta_i - \frac{\Delta_i^2}{2}) \prod_{j \neq i} \Delta_j X_j^{lt}] + \sum_{i \in P} [(X_i^{lt})^2 a_i (\Delta_i + \frac{\Delta_i^2}{2}) \prod_{j \neq i} \Delta_j X_j^{lt}]}{(a_0 + \sum_{i=1}^7 a_i X_i^{lt}) \prod_{j=1}^7 \Delta_j X_j^{lt}} \quad (10)$$

here $a_1 = -1,7$; $a_2 = 22,6$; $a_3 = 55,94$; $a_4 = 7,17$; $a_5 = 169,82$; $a_6 = -4,57$; $a_7 = -29,35$.

Table 2 presents values of the coefficient to stress sensitivity K_{lt} of the largest Ukrainian banks in 2013 for three scenarios: 1) $\Delta_i = 0,1$ for all $i = 1, \dots, 7$; 2) $\Delta_{1,2,3,4} = 0,1$, $\Delta_{5,6,7} = 0,2$; 3) $\Delta_{1,2,3,4} = 0,2$, $\Delta_{5,6,7} = 0,1$. This coefficient provides valuable information regarding the bank's ability to maintain the stability of the key financial indicators and determines the degree of its sensitivity to stressful scenarios implementation. In other words, the coefficient K_{lt} describes an important constituent of the overall financial stability of the bank, i.e. ability to maintain a stable current level of solvency, maintaining the influence of the factors of external and internal environment.

In 2013 under all scenarios, the largest by assets banks: PrivatBank, Oschadbank and Ukreximbank have the lowest coefficients K_{lt} , and hence the highest stability. Brokbusinessbank, Prominvestbank and Nadra proved to be the most sensitive to shocks.

Yet bank low sensitivity to stress does not necessarily mean a permanent bank ability to meet its obligations and ensure profitability at a level sufficient for normal functioning in a competitive environment, and therefore be financially sustainable. Due to Kyshakevych B.⁹, to assess financial stability one should develop a scalar indicator that would simultaneously take into account two key aspects: the ability of the bank as a dynamic system to retain unchanged its main characteristics under various stress scenarios, i.e. stability and, on the other hand, the level of solvency. The fact is that the bank in a poor financial situation, with low credit rating may sometimes show pretty good stability of its main parameters in the implementation of stress scenarios compared with banks with high ratings, particularly if relative indicators are used. Thus, invariance of its basic parameters will feature bank stability, but not its sustainability, as the latter additionally foresees providing of necessary solvency, liquidity of a banking institution, maintenance of bank risks at an acceptable level for the successful performance of its functions.

Consequently, for financial stability assessment in addition to sensitivity to stress scenarios the bank must also consider its current financial situation that is the key indicator of the level of solvency. With this purpose in mind, we have proposed a new measure of bank financial stability, which with the application of the model (9) for Z-score assessment, can be represented as follows:

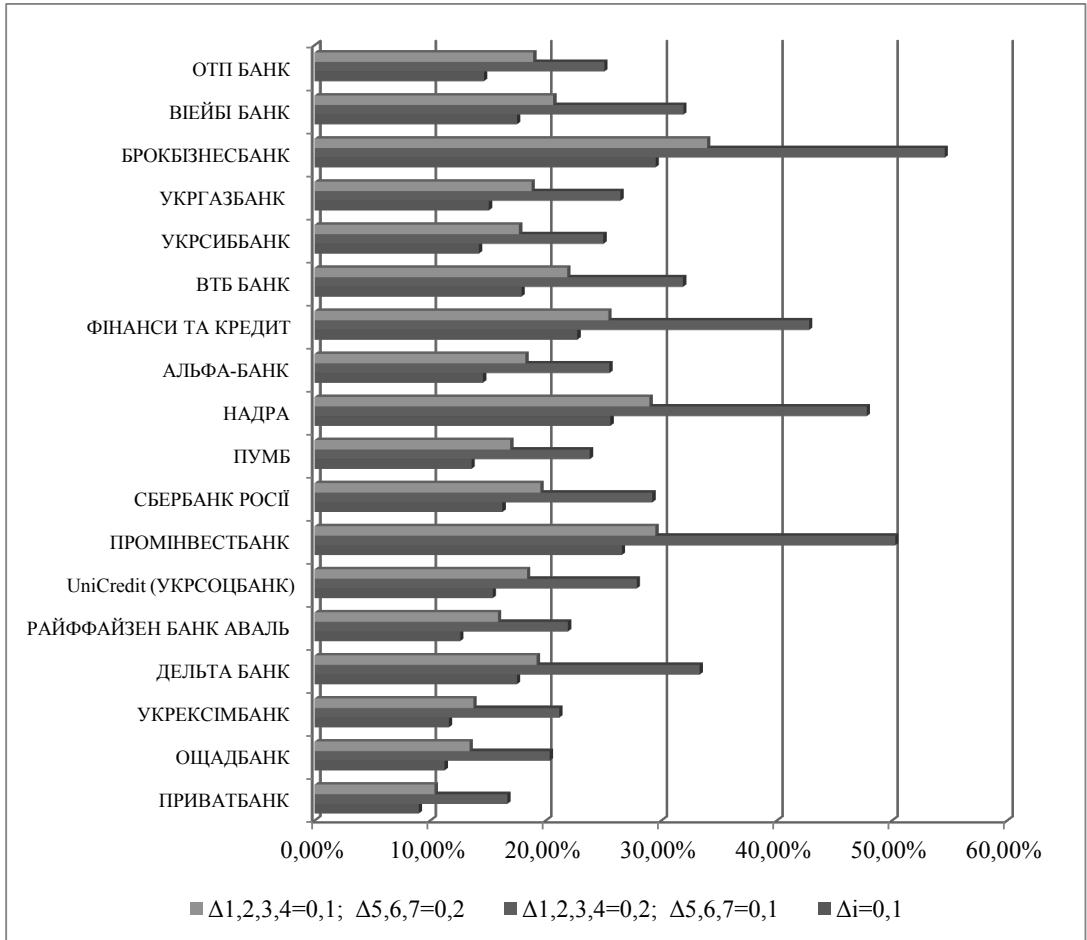
$$Z_{\text{факт}}^{lt}(\Delta, X^{lt}) = Z_{\text{факт}}^{lt} \cdot (1 - K_{lt}(\Delta, X^{lt})) \quad (11)$$

where through Δ, X^{lt} vectors are marked: $\Delta = (\Delta_1, \Delta_2, \dots, \Delta_7)$; $X^{lt} = (X_1^{lt}, X_2^{lt}, \dots, X_7^{lt})$.

$Z_{\text{факт}}^{lt}$ is determined according to the formula (1). Figure 1 and Table 2 presents the indicator of financial stability $Z_{\text{факт}}^{lt}$ and the coefficient of sensitivity to stress K_{lt} at different values Δ according to 2013 data.

⁹ Кишакевич Б.Ю. *Інтегрально-аналітичний підхід до оцінювання фінансової стійкості банку*. Вісник Запорізького національного університету, 2014, No. 4 (24), pp. 75–81.

Figure 1. The coefficient of sensitivity to stress of Ukrainian banks in 2013 for different values of stress parameter Δ



Source: author's own research.

Table 2. Indicator of financial sustainability value Z_{CT}^{lt} and coefficient of sensitivity to stress K_{lt} for different values Δ according to 2013 data

	$Z_{\phi_{акт}}$	Z_{CT}^{lt}	K_{lt}	Z_{CT}^{lt}	K_{lt}	Z_{CT}^{lt}	K_{lt}
		$\Delta_i = 0, 1$		$\Delta_{1,2,3,4} = 0, 2$ $\Delta_{5,6,7} = 0, 1$		$\Delta_{1,2,3,4} = 0, 1$ $\Delta_{5,6,7} = 0, 2$	
PRYVATBANK	28.50	25.93	9.02%	25.54	10.38%	23.75	16.68%
OSCHADBANK	43.71	38.79	11.25%	37.85	13.41%	34.81	20.35%
UKREXIMBANK	28.00	24.74	11.63%	24.15	13.74%	22.07	21.17%
DELTA BANK	9.44	7.787	17.51%	7.63	19.22%	6.29	33.32%
RAIFFEISEN BANK AVAL	19.50	17.04	12.60%	16.40	15.87%	15.23	21.92%
UniCredit (UKRSOTSBANK)	31.40	26.56	15.42%	25.63	18.38%	22.65	27.88%
PROMINVESTBANK	2.59	1.903	26.59%	1.83	29.49%	1.29	50.28%
SBERBANK OF RUSSIA	9.70	8.123	16.26%	7.80	19.54%	6.86	29.23%
PUMB (FIRST UKRAINIAN INTERNATIONAL BANK)	26.70	23.07	13.58%	22.18	16.93%	20.34	23.81%
NADRA	7.06	5.252	25.60%	5.01	28.98%	3.68	47.81%
ALPHA BANK	23.83	20.36	14.58%	19.49	18.24%	17.75	25.51%
FINANCE AND CREDIT	7.57	5.85	22.74%	5.65	25.42%	4.33	42.80%
VTB BANK	7.46	6.124	17.91%	5.83	21.86%	5.08	31.88%
UKRSYBBANK	19.10	16.38	14.23%	15.72	17.69%	14.33	24.99%
UKRGASBANK	5.70	4.84	15.08%	4.63	18.77%	4.19	26.46%
BROKBUSINESSBANK	11.63	8.197	29.51%	7.68	33.96%	5.28	54.58%
VAB BANK	5.60	4.619	17.52%	4.44	20.65%	3.81	31.91%
OTP BANK	14.96	12.77	14.66%	12.13	18.92%	11.21	25.07%

Source: author's own research.

In Table 2 we see that reducing of macroeconomic indicators has a greater impact on financial stability than interbank ones. On the one hand, it is a quite controversial result, since fluctuations in the values of such bank indicators as its liquidity, return on capital, size of the loan and deposit portfolios, interest margin would have a more significant impact on solvency and stability of the bank than macroeconomic indicators. However, the experience proves that this dependence is confirmed primarily for the banking systems of highly developed countries, while emerging economies are characterized by frequent financial crises that are accompanied by structural shifts in all economic sectors, including the banking sector and the significant volatility of the main macroeconomic indicators. Suffice it to mention the results of 2007–2009 global financial crisis for the Ukrainian financial system when Ukraine appeared to be the second in the world in negative consequences for the national economy, and despite the fact that before the crisis several years macroeconomic indicators showed steady growth. To rescue the banking system from default, the NBU carried out a massive refinancing of commercial banks. However, the assigned funds were used to purchase foreign currency for speculative purposes. In conditions of limited supply of foreign currency, the increase in hryvnia money supply triggered a collapse of hryvnia to 8–9 UAH

per USD¹⁰. All this underlines the excessive sensitivity of Ukrainian banks compared to banks in highly developed countries to macroeconomic stability, currency risks and inflation.

Conclusion

Offered in the paper approach to the assessment of bank financial stability is based on interpretation of the concept “financial stability of the bank” that integrates not only the bank’s ability to ensure solvency and liquidity of a financial institution at the appropriate level, but also the possibility to consistently carry out its core functions, while maintaining its key characteristics stable and insensitive to stress scenarios implementation.

Based on stress scenarios implementation, the developed scalar measure of financial stability (11) enables to assess bank sensitivity to financial shocks not only in certain discrete changes in external and internal factors, but also by means of integral calculus on arbitrary stress intervals. The existing approaches to the analysis of results of stress tests and financial stability usually give a slightly different answer to the question – they do not prove stability, but rather they show the probability of bank default over a certain time horizon, bank financial situation at a given time, etc. This is because there is no common understanding of the economic essence of the term “financial stability” in the scientific literature and the term “solvency of the bank” is often used instead of it. The proposed in the paper approach provides a comprehensive assessment of bank financial stability as a scalar value that makes it possible to compare and rate banks performances not only in terms of their profitability or bankruptcy probability, but also their financial stability.

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¹⁰ О. Буряк. Світова фінансова криза та її вплив на банківську систему України / О. Буряк // Збірник наукових праць, 2013, Вип. 34, «Ефективність державного управління», p. 323.

Marianna Księżyk, Marek Michalski
AGH University of Science and Technology, Poland

DIVERSITY OF LABOR COSTS AND ITS IMPLICATIONS FOR ATTAINING SUSTAINABLE DEVELOPMENT IN EU COUNTRIES

Summary

Following the assertion that wage competition significantly hinders the achievement of sustainable and integrated development by building a competitive knowledge-based economy in EU countries, as envisaged by the Europe 2020 strategy, this study presents the results of analyzes of labor costs in EU countries. Discussing these issues, in the first place, it shows significant discrepancies between the economic meaning of labor costs and their representation in statistics that are used in existing research.

* * *

Introduction

Socioeconomic effects of economic processes, taking place under quickly progressing globalization in economic systems based on the doctrine of neoliberalism, manifesting itself as corporate libertarianism¹, show that a large portion of the population of EU countries is not participating in economic growth. The spread in wealth² and progressing precarization of society³ is growing in EU countries. The lack of work is conducive to wage competition and degrades professional and social relationships. This situation creates the need to implement effective methods of eliminating the negative effects of these economic processes, through state intervention to correct the free-market-oriented distribution of income and wealth.

Following the assumption that wage competition makes it significantly more difficult to achieve sustainable and integrated development in EU countries⁴ by building a competitive knowledge-based economy, as envisaged by the Europe 2020 strategy, the study presents the results of analyzes of labor costs in EU countries. Discussing these issues, in the first place, the significant discrepancies between

¹ R.H. Robbins, *Główne problemy a kultura kapitalizmu*, Wyd. ProPublico, Poznań 2006, p. 123.

² T. Piketty, *Kapitał w XXI wieku*, Wyd. Krytyki Politycznej, Warszawa 2015.

³ G. Standing, *Prekariat. Nowa niebezpieczna klasa*, Wyd. Nauk. PWN, Warszawa 2014.

⁴ *Traktat ustanawiający konstytucję dla Europy*, Dz. Urz. UE C 370, t. 47, 2004; *Traktat Lizboński*, Dz. Urz. UE C 306, t. 50, 2007.

the economic meaning of labor costs and their representation in statistics being used in existing research are presented.

The economic meaning of labor costs in international statistics

In economic literature, the concept of labor costs is known since 1925. It was introduced by F. Laitner, who classifying the following as labor costs: wages and benefits provided by employers to employees, including accident and sickness insurance, clothing and training⁵.

The International Labour Organisation gives a similar definition of labour costs as the total cost incurred by the employer in the employment of the employee. The components of this cost are: remuneration for work done, remuneration for time off, bonuses and gratuities, the cost of meals, beverages, payments in kind, cost of housing employees borne by employers, employer's expenses on social security, training costs incurred by the employer, social security benefits, costs of transporting workers, work clothes, cost of recruitment and taxes regarded as labor costs⁶.

The European Union, guided by the need to have the necessary statistics for ratings of countries' socioeconomic development and policies for socioeconomic cohesion between countries and regions of the Community, also adopted a uniform methodology (proposed by Eurostat) for the study of labor costs in the EU. Based on this methodology, labor costs or employment costs (these two terms are used interchangeably) are defined as the total expenditure incurred by employers in connection with the employment of workers, namely: salaries of employees in cash and in kind, contributions to social benefits paid by employers, the costs of vocational training, other expenses and taxes relating to employment settled in the burden of labor costs, less any subsidies received⁷. In this harmonized methodology for studying employment costs (labor costs) proposed by Eurostat in the EU, there are the following components:

- D. Total labour costs
 - D.1 Compensation of employees
 - D.11 Wages and salaries (total)
 - D.111 Wages and salaries (excluding apprentices)
 - D.1111 Direct remuneration and bonuses
 - D.11111 Direct remuneration
 - D.11112 Bonuses
 - D.111121 Bonuses paid at fixed period (optional)
 - D.1112 Payments to employees savings schemes
 - D.1113 Payments for days not worked
 - D.1114 Wages and salaries in kind
 - D.11141 Company products (optional)
 - D.11142 Staff housing (optional)
 - D.11143 Company cars (optional)
 - D.11144 Other (optional)
 - D.112 Wages and salaries of apprentices
 - D.12 Employers' social contributions (total)
 - D.121 Employers' actual social contributions (excluding apprentices)
 - D.1211 Statutory social security contributions

⁵ A. Furmańska-Maruszak, *Koszty pracy a zatrudnienie. Współczesne koncepcje a rzeczywistość*, Dom Organizatora, Toruń 2008, p. 25.

⁶ Ibidem, pp. 26–28.

⁷ *Commission Regulation EC no. 1726/1999.*

- D.1212 Collectively agreed, contractual and voluntary social security contributions
- D.122 Employers' imputed social contributions (excluding apprentices)
- D.1221 Guaranteed remuneration in the event of sickness
- D.1222 Guaranteed remuneration in event of short-time working
- D.1123 Payments to employees leaving the enterprise
- D.1124 Employers' imputed social benefits
- D.123 Employers' social contributions for apprentices
- D.2 Vocational training costs (excluding costs for apprentices)
- D.3 Other expenditure
- D.4 Taxes
- D.5 Subsidies

The above survey methodology for labor costs is so far not connected with an obligatory introduction in the EU of the same economic meaning and methodology for determining the individual components, which is undoubtedly conducive to wage competition.

Specific causes of the variation in structure and level of labor costs in the EU are manifold. They include both basic ones, which include economic doctrine adopted in the country as the basis of socioeconomic policies as well as detailed solutions on the types of public goods and methods of their delivery as well as the shaping of tax and payroll systems, including the setting of a minimum wage.

When listing the causes of variation in labor costs in EU countries it is worth recalling that even EU-15 countries have different economic systems, namely: liberal market (in the UK and Ireland), the social-democratic (in Scandinavian countries), continental with the dominance of Germany as well as Mediterranean (patrimonial)⁸. The diversity of economic systems in EU countries threatens their harmonious development and the implementation, in practice, of democratic principles denoting freedom, equality and social justice.

The level of labor costs in EU countries, including minimum wages

Authors examining the level of labor costs focus attention on the so-called tax wedge. It represents the difference between total costs borne by employers and net wages received by employees. Analysis shows that the tax wedge, both in OECD countries and EU countries, is very diverse. For example, in Poland it has settled at a level of about 42%; in the Nordic countries, France and Germany it exceeds 50%, and in Belgium even 55%.

In many EU countries, despite the presence of a high labor tax wedge, salaries of employees, including those getting minimum wages, are relatively high compared to new EU countries. This undermines the thesis promoted in Poland (by neoliberal economists and politicians) that high labor costs reduce the possibility of increasing salaries of employees, including the establishment of a minimum wage at a level ensuring decent living conditions.

Great diversity is worth noting when comparing the level of minimum wages in the EU. This is shown in Table 1.

⁸ B. Amble, *The Diversity of Modern Capitalism*, Oxford 2003.

Table 1. Gross monthly minimum salaries and average monthly gross salaries in euros

Country	Gross monthly minimum salary	Nationwide average monthly gross salary	% ratio of minimum salary to the average monthly gross salary
Luxembourg	1921	4274	45%
Belgium	1502	3261	46%
Netherlands	1486	3073	48%
Ireland	1462	2700	54%
France	1445	2480	58%
United Kingdom	1251	3650	34%
Slovenia	789	1550	51%
Spain	753	2169	35%
Malta	718	1253	57%
Greece	684	1265	54%
Portugal	566	1018	56%
Poland	404	966	42%
Croatia	396	1087	36%
Estonia	355	1082	33%
Slovakia	352	924	38%
Hungary	342	836	41%
Latvia	320	820	39%
Czech Republic	310	973	32%
Lithuania	290	714	41%
Romania	190	576	33%
Bulgaria	174	451	39%

Notes: minimum wages as of 2014; average monthly gross salaries are not reported every year thus newest data available as of assess date 17.10.2015 was reported.

Source: Eurostat, <http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00155&plugin=1>; en.wikipedia.org/wiki/List_of_European_countries_by_average_wage.

As shown by the data in the table above, the gross minimum salary in new EU countries, including Poland, is relatively low, both in relation to the so-called rich countries of the EU and in relation to the average wage in the economies of these countries and the so-called living wage established by the Committee of Experts of the Council of Europe at 68% of the average wage in the national economy.

Due to low minimum wages and progressive precarization of society, the risk of poverty or social exclusion (as a percentage of people at risk of poverty and social exclusion) in EU countries is high, as shown by the data in Table 2.

Table 2. Percentage of people at risk of poverty and social exclusion in EU countries

EU Countries	2011	2014	Change
EU-27	24.2	24.4	0.2
Austria	19.2	19.2	0.0
Belgium	21.0	21.2	0.2
Bulgaria	49.1	40.1	-9.0
Cyprus	24.6	27.4	2.8
Czech Republic	15.3	14.8	-0.5
Denmark	18.9	17.8	-1.1
Estonia	23.1	n/a	n/a
Finland	17.9	17.3	-0.6
France	19.3	18.6	-0.7
Germany	19.9	20.6	0.7
Greece	31.0	36.0	5.0
Hungary	31.0	31.1	0.1
Ireland	29.4	n/a	n/a
Italy	28.2	28.1	-0.1
Latvia	40.1	32.7	-7.4
Lithuania	33.1	27.3	-5.8
Luxembourg	16.8	n/a	n/a
Malta	22.1	23.8	1.7
Netherlands	15.7	17.1	1.4
Poland	27.2	24.7	-2.5
Portugal	24.4	27.5	3.1
Romania	40.3	40.2	-0.1
Slovakia	20.6	18.4	-2.2
Slovenia	19.3	20.4	1.1
Spain	26.7	29.2	2.5
Sweden	16.1	16.9	0.8
United Kingdom	22.7	n/a	0.2

Source: Eurostat http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=t2020_50&language=en (19.10.2015)

Minimum wages in EU countries should be compared not based on gross, but rather based on net amounts. Comparing net wages is appropriate, given the wide variation in the EU of personal income tax systems. It is expressed in the presence of a relatively large number of tax brackets in EU-15 countries, progressive taxation of income, high tax rates on high income and low on low income, an elaborate system of incentives and the so-called zero tax rate on relatively low incomes, which means that people with low incomes do not pay tax. The most common forms of relief are incentives for young couples, people with disabilities, single parents, the elderly, and people remaining unemployed for more than a year before starting work.

In contrast to EU-15 countries, in new EU countries, including Poland, existing tax systems are incompatible with the principle of a just tax burden. This is indicated by a small number of tax brackets. The zero tax rate covers only very low (almost unnoticeable) income. There are high

tax rates on low incomes (e.g. in Poland as high as 18%) and low rates on high income (in Poland 32%). Besides, there is a tax on the minimum wage that does not even provide subsistence as well as a flat tax in countries such as Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, Romania and Slovakia⁹.

It should be recalled that being guided by the principle of justice for recommending the tax burden is not only advocated by many contemporary economists, but the principle has been recognized for a long time as one of the basic economic principles of good taxation. This was argued long ago by such liberals as Adam Smith and J. S. Mill. According to A. Smith “The subjects of every state should contribute to the maintenance of government in the strictest relation to their capabilities”¹⁰. On the other hand J.S. Mill said that “one must not require for public purposes, for example, 10% of the income of a wealthy man and of one living in poverty, because the sacrifice required of the latter would not only be larger than of the first but completely incomparable with it, because it would deprive him of means to ensure existence. Tax should be paid on amounts above some set minimum – exempted from taxation – that is necessary for stocking up on what is needed for life and for good health, and protection against ordinary sufferings of the flesh, but not enough for indulgence”¹¹.

In order to achieve sustainable and integrated development in EU countries, the tax systems of individual countries should include measures to ensure an equitable distribution of the tax burden and eliminate distributions of wealth and income that are incompatible with the basic principles of democracy. From this it follows that the function of personal income taxes should be to protect income against decline below the living wage, while maintaining the principles of a just tax burden. Targeting this principle would give residents of EU countries an opportunity to participate in the effects of economic growth.

Low minimum wages and low wages of hired employees, particularly in countries of the former so-called real socialism, as well as a very high and growing income gap between the highest and lowest earners mean that neoliberal capitalism has created “inequality that kills”¹². Now one such country is Poland, where (according to the Main Statistical Office – GUS) 2.8 million people lived in extreme poverty in 2014 and their expenditures did not exceed the established minimum subsistence level of 540 PLN per month for a single person or 1 458 PLN for household of four. It should be added that in 2014, the average income per person was in Poland (as per OECD) was 16 234 USD, whereas the OECD average was 23 938 USD. In addition, Poles spend as much as 1929 hours per year on their job, and the OECD average is 164 hours less¹³.

Neoliberals promoting the view that the low wages of workers are conducive to creating and maintaining jobs do not notice that the primary source of low wages for employees is ignorance of the basic principles of economics and building the economic systems of modern market economies on the doctrine of neoliberalism. Neoliberals, especially economist popular in Polish mass media (such as L. Balcerowicz) – as proven by A. Walicki, based on a thorough assessment of the achievements of theory and practice of the historical development of liberalism¹⁴ – wrongly equate neoliberalism with classical liberalism and ideological dogma of free markets with democracy, which means freedom, equality and justice.

⁹ A. Krajewska, *Podatki w Unii Europejskiej*, Wyd. Nauk. PWE, Warszawa 2010.

¹⁰ A. Smith, *Badania nad naturą i przyczynami bogactwa narodów*, t.1, PWN, Warszawa 1957 (year of the publication that was used, original in 1776), p. 584.

¹¹ J.S. Mill, *Zasady ekonomii politycznej*, t. 2, PWE, Warszawa 1966, p. 586.

¹² G. Therborn, *Nierówność która zabija*, Wyd. Nauk. PWN, Warszawa 2015.

¹³ Informacja Giełda, „Przegląd”, 27.07.–2.08.2015, p. 6.

¹⁴ A. Walicki, *Od projektu komunistycznego do neoliberalnej utopii*, PAN Universitas, Kraków 2013.

Low wages of employees as a result of ignoring the basic principles of economics

The basic principles of economics, and according to some economists (including E. V. Bowden, J. H. Bowden) even the basic laws of economics¹⁵ are: the well-being of society comes from work and producing goods that meet the needs of countries' residents and there is no such thing as a free lunch.

The result of ignoring these principles, or laws, of economics is the declining interest in employing financial capital in the production of goods that meet needs and turning it into the money that seeks profits in capital markets. This led to the formation of "casino capitalism"¹⁶, in which banks, stock exchanges and financial markets alienated themselves from the economy as a system and financial capital became an independent element. In the resulting situation, money does not serve the economic functions that it should fulfill and to which it was appointed. Playing the stock market, rather than the production of material goods, has become a way of accumulating capital and wealth. Guided by the principle of maximizing the financial effect, the financial markets impose impermanence on the countries of the world, they do not provide continuity of economic processes that is essential for the development of countries. The mysticism of risk management became important, rather than the economy as a system (consisting of its relevant elements) realizing the basic function of economic processes, i.e. a steady increase in the standard of living of all residents of countries. Under globalization and neoliberalism, it has become unimportant in what company one invests in the capital markets, only to quickly sell one's shares at a profit. This opinion is confirmed by data from the report of the Club of Rome (*Money and Sustainability – The Missing Link*). This report shows that over 95% of the turnover on the financial markets is pure speculation¹⁷. Nevertheless, neoliberal economists and politicians behave as if they were not aware that the market without jobs and investment in the production of goods which meet needs, is an economic absurdity.

To realize sustainable and integrated development in EU countries by building a competitive knowledge-based economy, it is essential to follow the basic principles of economics. This should rely on binding the salaries of all participants in economic processes with the contribution and effects of their work in making goods that are essential to society, namely: salaries of employees (workers), managers, board members and employees that support these processes. This principle should also apply to employees of state and EU administration, i.e. their number and wage levels should be based on their contribution to society. Today, this principle is not observed in public administration, including countries' central and EU's administration.

Some economists in EU countries already point to the very important issue of the prolific growth and cost of maintaining the public administration. For example, M. Otte (based on research conducted in Germany) states that "employment in German public offices can be reduced by as much as 50% – 70% without any negative consequences on effects of their work, while the remaining officials should be top-class specialists, focus strictly on state tasks and be prohibited from getting additional income from the private sector, which means, among others, that they should not be members of supervisory boards"¹⁸.

It is a pity that such research, as was carried out in Germany, was not conducted in all EU countries as well as the EU administration and its results were not used in practice. There is an urgent need to conduct similar studies in Poland as well, where the central state administration grew to a mammoth size (e.g. at the beginning of the transformation, the state administration employment was at about 150 thousand people, and now it exceeds 1.5 million).

¹⁵ E.V. Bowden, J.H. Bowden, *Ekonomia nauka zdrowego rozsądku*, Fundacja Innowacja, Warszawa 2002, p. 7.

¹⁶ S. Strange, *Casino capitalism*, London 1986.

¹⁷ L. Pawłowski, *Pazerna finansjera*, „Przegląd”, 23 – 29.09.2013, p. 46.

¹⁸ M. Otte, *Kiedy nadchodzi kryzys. Co powinniśmy zrobić, aby wyjść obronną ręką z obecnego kryzysu gospodarczego*, Wyd. Studio EMKA, Warszawa 2009, p. 236.

To justify this statement, it is enough to recall the data on employment in the office of Poland's President. Well, the office of President of the Republic J. Moscicki employed 60 people (40 people in the civilian and 20 in the military office), despite the fact that he was authorized to issue regulations with the force of law; the office of President Jaruzelski employed 51 people, the office of President Lech Walesa already 260 people, the office of President Kwasniewski 460 people, the office of President Lech Kaczyński 986 people. Also, the office of Prime Minister Donald Tusk employed over 1,000 people, despite the existence of extensively staffed ministries¹⁹.

When creating a structure for public administration, including the central one, one should not forget (as it is still done in Poland, as evidenced by, among others, extensive political offices) that, according to a well-known classical definition, bureaucracy is a rationalized and depersonalized management system.

Following economic principles, pursuing the sustainable development of EU countries should mean that wages ensure a decent standard of living for everyone who is employed. Compliance with this rule has been recommended even by A. Smith since he wrote: "There is, however, a certain rate, below which it seems impossible to reduce, for any considerable time, the ordinary wages even of the lowest species of labour. A man must always live by his work, and his wages must at least be sufficient to maintain him. They must even upon most occasions be somewhat more, otherwise it would be impossible for him to bring up a family, and the race of such workmen could not last beyond the first generation. (...) the lowest species of common labourers must everywhere earn at least double their own maintenance, in order that, one with another, they may be enabled to bring up two children"²⁰. Smith's principle should be the basis for determining the minimum wage in EU countries, since perfect competition does not and cannot exist in labour markets, which was known to and argued by A. Smith.

These statements indicate that there is no substantive justification for a flexible labor market and the minimum wage at a level not providing decent living conditions. In EU countries, labor market policy should be focused on limiting the spread of inequality and poverty, not its growth.

Neoliberals favoring a more flexible labor market, low wages and low minimum wages for hired workers, do not notice that such a policy is very dangerous also because the country will fall into a kind of trap. It consists in the fact that when workers' wages are low, domestic demand for market goods will not grow, and the lower the demand, the lower the production, employment and investments because one does not invest and one does not produce when there is no one to sell manufactured goods to. This results in weaker economic growth, lower state budget revenues from taxes, rising unemployment and public debt.

M. Kalecki (who he lived in 1899–1970) also drew attention to the appropriate level of wages. He demonstrated (using empirical data) that if capitalists raise their rate of profit through the reduction of wages, it will lead to a multiple drop in income. At that point in time, even lowering the cost of credits will not encourage borrowing and investment in the production of market goods²¹.

The current policy of low wages for hired workers and high, not correlated with economic performance of companies, remuneration for managers in EU countries, in particular in Poland and other new EU countries, is unjustified. Mainly because in such economies there is an, greater than in egalitarian ones, instability of consumer spending, which makes the economy more vulnerable to fluctuations of the world economy²².

A similar view is presented by M. Otte. He states that in non-egalitarian economies, people with very high incomes, with no chance of consuming them, make greater speculative financial investments

¹⁹ S. Bratkowski, *O barierach rozwoju, marnotrawstwie i etyce służby publicznej*, in: *Sektor finansowy – dylematy i kierunki rozwoju*, scientific editor: S. Rudolf, VIII Kongres Ekonomistów Polskich PTE, Warszawa 2008.

²⁰ A. Smith, *Badania nad naturą i przyczynami bogactwa narodów*, t.1, PWN Warszawa 1957, p. 386.

²¹ M. Kalecki, *Dziela t. 1, Kapitalizm, koniunktura, zatrudnienie*, PWE, Warszawa 1979, p. 706.

²² T. Kowalik, *Systemowe źródła obecnego kryzysu*, „*Master of Business Administration*”, no. 5(97) september–october 2009, p. 16.

and increase luxury consumption, which are subject to much greater fluctuations than the consumption of goods by average families²³.

The need for an adjustment to the free market distribution of income and wealth, moving away from a policy of enormous differences in wealth and income and low wages for employees is being noticed not only by non-neoliberal economists, but also by some politicians in EU countries. An example of this is a statement by Steinbrück (Finance Minister in the Government of Angela Merkel), in which, among others, he states: “what we should do is increase the purchasing power of Germans by raising wages”. H. Flassbeck (economist, former Deputy Minister of Finance) also draws attention to the negative effects of low-wage workers and flexible labor markets on economic growth²⁴.

These positions clearly justify the need to move away from the doctrine of neoliberalism as the foundation of economic systems and the creation of a modern egalitarian society in EU countries.

Conclusion

The results of this study lead to the following conclusions:

1. When pursuing sustainable and integrated development in EU countries, the ideological basis for economic policy should be not be neoliberalism but social liberalism, open to the issue of full employment, egalitarianism and social security of the inhabitants.
2. EU countries cannot withdraw from many areas of activity, including acting as a coordinator and an active creator of socioeconomic policy to implement the principles of democracy, meaning freedom, equality and social justice.
3. Differentiation of labor costs in EU countries, in particular the net salaries of employees, induces wage competition and results in the outflow of high-quality human capital from countries with low wages, making it difficult for those economies to attain sustainable development by building a competitive knowledge-based economy.
4. EU countries that want to implement sustainable development cannot ignore the basic principles of economics and experience from which it follows that an important factor in triggering innovation are employees identifying with company objectives and this cannot be expected from low-paid workers who do not have permanent employment.
5. EU countries implementing sustainable development cannot accept huge income gaps and a policy of flexible labor markets, leading to “precarization of society”. They should put in place mechanisms that inhibit this process. Labor market policies should be geared towards reducing the growth of inequality and poverty, not its expansion.
6. Everyone who works in EU countries should be paid sufficiently to ensure decent living conditions, determined in accordance with the basic principles of economics, i.e. based on the effects and labor input in the production of goods that meet needs. Besides, even the lowest-wage employees should make a decent living. In practice, this should result in a statutory determination of a net minimum wage not lower than the subsistence minimum established on the basis of statistics showing the actual costs of maintaining the average family or by reference to a basket of goods which meet essential needs.

²³ M. Otte, op. cit., p. 137.

²⁴ J. Żakowski, *Rozmowy Żakowskiego. Rynek. Rozbić skarbonki!*, „Polityka”, 2013, no. 28 (2919), p. 28.

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Maria Sierpińska, Beata Kulisa
Cracow University of Economics, Poland

THE LEVEL OF MINIMUM WAGES IN POLAND AS COMPARED TO OTHER COUNTRIES

Summary

The paper deals with a problem of minimum wage shaping in Poland as compared to other countries in the world. Minimum wages in Poland went up more than 2.5 times during 2000–2015 with the growth of the average wage in the business enterprise sector of 2.1. The faster increase in minimum wage resulted in the growth of its share in the average wage from 36.4% in 2000 to 42.4% in 2015. Trade unions strive to have the minimum wage in Poland constitute 50% of the average remuneration. In the years 2008–2015, the minimum wage in Poland went up by 31%. Wages grew faster in countries where the wages were very low. Much smaller growth than in Poland of the minimum wage took place in West European countries. As regards the level of the minimum wage Poland is ranked 12 among the countries under examination. However, it is ranked higher if its purchasing power standard (PPS) is considered. The minimum wages expressed by the purchasing power were 80% higher than the minimum wages expressed in Euro. In the developed countries the minimum wage was by a dozen or so percent higher than the wages expressed in Euro.

* * *

Introduction

The latest changes in the remuneration systems for employees consist in considering their needs, expectations towards work and plans for the future. Since remuneration is compensation for the performed work and a specific reward for a contribution to achieving the organisation's objective. For the entrepreneur, a wage is a cost. Each entrepreneur employing employees must consider labour costs and related components. The employer will always strive for labour cost rationalisation and making a company competitive, while the employee will expect high wages. These divergent expectations of both parties make the governments determine minimum wages. The purpose of legal regulations introduced in Poland concerning the minimum wage was to eliminate exploitation of employees, in particular the employees with the lowest qualifications, who, as a result of being helpless in the face of life, decided to perform difficult and strenuous work for a lowered pay. The minimum wage in its basic function leads,

therefore, to eliminating unfair competition by means of drastic reduction of wages and protection of the weakest social groups.

The purpose of the study is to analyse minimum wages in Poland compared to other countries and to show the disparity between the minimum wage and the average remuneration. This analysis makes it possible to determine whether the minimum wage is keeping pace with the economic growth.

Wages as the basic incentive tool

Wages are the most important incentive encouraging the employed employees to more efficient work and to improve their skills. The power of wage incentive is determined not only by the wage amount, but also its connection with the employees' outcome of work. "Work is one of the simplest, yet the most effective means of communication between the employer and the employee. It informs the employee how much they are worth for the organisation they co-create. The meaning of work as an incentive measure is strongly determined by individual needs and expectations¹.

According to Maslow, human behaviour is a specific outcome of their efforts to satisfy needs, not only temporary emotional states. These needs have a logical hierarchy and are arranged in the order from the lower rank needs to the higher rank needs. Physiological needs must be satisfied first². From the employee's perspective, wages constitute a physiological need. Their level should provide the employee and their family with basic living conditions – food, lodging, security and a safe working environment.

The purpose of remuneration is to compensate the employee for the labour potential contributed to the organisation. It should be fixed in a manner corresponding, in particular, to the type of work performed and qualifications required for its performance, and take into account the quantity and quality of the work performed³. According to the Labour Code, the following should be taken into account when determining remuneration:

- *the type of work performed* – the criterion differentiates work depending on features characterising it, such as a degree of complexity, difficulty, scope of duties, responsibility, conditions, etc.
- *the required qualifications* – this criterion differentiates wages depending on the fulfilment by the employee of qualification requirements to perform given work,
- *the quantity and quality of the work performed* – they are tools making it possible to fix a specific amount of remuneration for given work the employee is entitled to for a given period.

The main components of remuneration include⁴:

- basic wages,
- allowances,
- bonuses,
- commissions and rewards.

The basic wage constitutes the basic component of remuneration connected with the employee's formal qualifications and the type of work performed in a specific post. This remuneration is used to pay for the basic aspects of work and is of considerable importance for each employee and their sense of security. It motivates them to increase efficiency, assume greater responsibility and loyalty to the

¹ M.W. Kopertyńska, *Motywowanie pracowników, teoria i praktyka [Motivating employees, Theory and Practice]*, Wyd. PLACET, Warszawa 2008, p.106.

² L. Koziół, M. Tyrańska, *Motywowanie pracowników w teorii i praktyce [Motivating Employees in Theory and Practice]*, Wyd. Biblioteczka Pracownicza, Warszawa 2002, pp. 21–23, J. Woźniak, *Współczesne systemy motywacyjne [Contemporary Incentive Systems]*, Wydawnictwo Profesjonalne PWN, Warszawa 2012, p. 29.

³ *Act of 26 June 1974 The Labour Code with later amendments*, Article 78, <http://kodeks-pracy.org/III-wynagrodzenie-za-prace-i-inne-swiadczenia/wynagrodzenie-za-prace> (access on 23.01.2016)

⁴ Z. Pawlak, *Zarządzanie zasobami ludzkimi w przedsiębiorstwie [Managing Human Resources in an Enterprise]*, Wyd. Poltext, Warszawa 2011, p. 335–336.

company and to develop their competence⁵. Wage increases connected with evaluation of work outcomes, promotion or a larger amount of work without changing a position have a significant incentive effect⁶.

Allowances to the basic wage are added in the form of a specific amount of money or as a percentage of this wage. They may have a mandatory character resulting from legal regulations or voluntary, dependent on the employer. The former group includes allowances for work at night, overtime work, and compensatory allowances connected with being transferred to other work. In practice most frequently used facultative allowances are length-of-service allowances, duty allowances, allowances for work in harmful conditions, for work on second shift, for work on Sundays and days off, or for possessing special qualifications e.g. fluency in a foreign language, an expatriation allowance, qualification allowances, task allowances, allowances for fieldwork and other⁷. Bonuses are an important element of remuneration of basic incentive importance. They are conditioned upon the effects of work achieved directly by an employee, a group of employees or an economic entity as a whole. A bonus is a convenient remuneration form for the employer since⁸:

- out of all remuneration components it most strongly supports the company's strategy, partial objectives resulting from it, in particular,
- with a strategy change, it can be quickly adjusted to it, rules and criteria of awarding bonuses transformed,
- considerably increases flexibility of the remuneration system, and, accordingly, partially the company's adaptability,
- stimulates pro-efficiency organisational behaviours and creates internal entrepreneurship of employees,
- gives particular employees a chance of considerable growth of wages and thus reduces a pressure on increasing fixed components of remuneration,
- it contributes to improving the performance evaluation system, introducing controlling, etc.

The conditions and amounts of statutory bonuses are determined by regulations, while discretionary bonuses are granted to particular employees by managers or employee teams on the basis of periodical assessments. Enterprises use individual bonuses which are given to employees for personal performance, team bonuses for a team and bonuses conditioned on the performance of the entire organisation, frequently referred to as general bonuses⁹.

Commissions are fixed as a percentage of the generated profit or level of sales. They constitute a supplement to the basic wage. Their motivational nature is particularly visible in trade. The essence of employees' participation in profits is that they benefit from the company's development and efficiency. If the company functions well, their wages are higher and working conditions better, when a company is in a difficult financial situation, also the employee suffers from it.

Financial rewards are included in incentive elements and complement them. They are due to an employee after meeting certain conditions set forth in the rules of rewards. Rewards do not have a permanent character, they are paid periodically for special achievements, employee's attitude and contribution to the attainment of a set objective, which is not considered in the bonus regulations. Rewards differ, however, from the bonus by a weaker relationship with specific tasks, lack of clearly

⁵ Ibidem, p. 337.

⁶ T. Oleksyn, *Zarządzanie zasobami ludzkimi w organizacji [Managing Human Resources in an Organisation]*, Walters Kluwer Polska, 2008, pp. 241–242.

⁷ W. Sasin, *Wszystko o płacach [All about Wages]*, Wydawnictwo Sigma, Skierniewice 2004, p. 97.

⁸ L. Koziół, M. Tyrańska, *Motywowanie.. [Motivating...]*, op. cit. p.79.

⁹ M. Kostera, S. Kownacki, *Zarządzanie potencjałem społecznym organizacji [Managing a Social Potential of an Organisation]*, [in:] *Zarządzanie: teoria i praktyka [Management: Theory and Practice]*, scientific editors: A.K. Koźmiński, W. Piotrowski, WN PWN, Warszawa 2007, p.426.

specified criteria and a more discretionary character. They are an important tool in forming employees' attitudes and increasing the prestige of a manager motioning for granting a reward.

The rewards most frequently used in companies include¹⁰:

- jubilee award being gratification for long service in a given company or a given sector,
- annual reward – the so-called 13th month pay, paid annually on the basis of the rules of the annual awards,
- financial reward for exemplary performance of entrusted duties, showing initiative at work and increasing its efficiency and quality,
- team or individual reward for special achievements in performing company's tasks,
- periodical or annual award – granted cyclically to employees distinguishing themselves in professional work and obtaining good results in this work. It is paid on the basis of rules of periodical or annual awards.

Apart from the presented remuneration components, the employees receive all sorts of bonuses making remuneration for work more attractive.

Procedure for determining the minimum wage

The minimum wage is a statutorily determined amount of the lowest remuneration which an employer is obliged to pay an employee for performed work. Remuneration below the minimum wage is an infringement of the employees' rights. The minimum wage is uniform for the entire country, below which an employee employed on a full-time basis cannot be remunerated. The statutory mechanism of establishing the minimum wage is based on macroeconomic indicators, inter alia: growth of GDP in a given year, inflation level, and country's economic situation.

To determine the minimum wage, the basic remuneration and other benefits resulting from the employment relationship, which the Central Statistical office (GUS) considers personnel expenses in a given entity, are added up¹¹. Other benefits include bonuses and rewards. According to Article 6 of the Act on Minimum Wage, the minimum wage does not include: jubilee rewards, old-age and disability severance pays and overtime pay, although they are included in the list of remuneration components recognised by the Central Statistical Office. Provisions specifying the level of minimum remuneration additionally stipulate that in the first year of work the employees are entitled to 80% of the lowest pay. According to trade unions, these provisions are unconstitutional as they lead to unequal treatment of persons who have the same rights and obligations.

The amount of the minimum wage in Poland is fixed by a regulation by the competent minister every year by means of works and negotiations within the Tripartite Commission for Social and Economic Affairs (representatives of the government, representative trade unions and employers' organisations). In some countries the level of minimum remuneration depends of the region, age or education. Determination of the amount of the minimum wage may take place in the Tripartite Commission at the latest by 15 July of the year preceding the year for which it is established. If, however, the Tripartite Commission (at the moment the Council for Social Dialogue) fails to reach an agreement in this respect, the decision about the minimum wage is taken by the government. The ultimate amount of the minimum wage for work must be then established by 15 September of the given year. Within this period it is subject to publication in "Monitor Polski", the Official Journal of the Republic of Poland.

For several years proposals have appeared to differentiate the minimum wage according to regions. It is suggested that the costs of living costs, average earnings, unemployment level in a given region and

¹⁰ W. Sasin, *Wszystko o placach... [All about Wages...]*, op. cit., p.100.

¹¹ *The Act of 10 October 2002 on Minimum Wage*, Journal of Laws of 2002, number 200, item 1679 with later amendments, Article 6.

the GDP growth in a given province should be considered when establishing the minimum wage. Since a local labour market and an unemployment level are quite diversified in Poland. Yet, the employers object to the differentiation of the minimum pay depending on the region or industry. They are afraid of a high growth of the minimum wage, thereby the labour costs. Also economists sceptically approach this solution. According to them, the introduction of a regional minimum wage will contribute, inter alia, to the rise in unemployment in provinces where the minimum wage will be highest. Also the employees' representatives are against it; they think that this may contribute to unequal treatment of employees. A person starting work is less productive than a person with work experience¹².

The regulations concerning the minimum wage do not apply to civil law contracts, that is contracts of mandate and contracts for a specific task. In the event of being employed on a non–full time basis, the minimum wage is proportional to the working time. The principle of proportionality is also valid in the event of calculating the length of the employee's holiday leave. For persons employed under civil law contracts in 2016, the minimum rate of PLN 12 for an hour of work will be introduced. The essence of the government's draft act on the amendment of the minimum wage is to limit a phenomenon of work for remuneration lower than the minimum wage. The amendment imposes also an obligation upon an enterprise or other organisational unit to keep hourly records or produce such records by the contractor. Controls in this respect will be conducted by the National Labour Inspectorate. The proposed amendment is to discourage employers from entering into civil law contracts with employees instead of into employment contracts. To improve the quality of work it is postulated that a minimum hourly rate should be introduced as part of the employment relationship and a minimum hourly rate accepted as part of the services provided on the basis of public procurement regardless of the type of employment. This means inclusion of employment contracts, civil law contracts and self–employment into this solution¹³.

Shaping the basic remuneration in relation to the average remuneration in Poland and in the world

The level of the minimum wage is annually the basis for discussion broadly presented in magazines. Expectations of the parties to the negotiations are usually divergent. For several years trade unions have demanded that the minimum wage constitute the half of the average remuneration in the economy. Too fast growth, however, of the minimum wage without considering the unemployment level may lead to job losses and, as a consequence, excessive emigration of young people to countries with lower unemployment.

Table 1 shows the level of minimum wages during the last fifteen years, their growth and the growth of the average remuneration in the business enterprise sector. The minimum wage in 2014 was PLN 1680 gross. Compared to 2013 it went up by PLN 80. The rise in the minimum wage that year resulted from the Act of 10 October 2002 on Minimum Wage for Work¹⁴ and the Regulation of the Council of Ministers of 11 September 2013 on the Amount of the Minimum Wage for Work in 2014¹⁵. In 2015, the minimum wage was PLN 1750 gross a month. Therefore, in 2015, an employee employed for a minimum wage earned PLN 1,286.16 net. This amount does not concern persons starting their careers in a given year. In the first year of work the minimum wage is always lower. Such a reduced value is

¹² www.gazetaprawna.pl (access 23.01.2016).

¹³ J.P. Męcina, *Stawką minimalną w umowy zlecenia i samozatrudnienie [With the Minimum Rate Against Contracts of Mandate and Self–employment]*, "Dziennik Gazeta Prawna", dated 26 January 2016, no. 16, p. B11.

¹⁴ *The Act of 10 October 2002 on the Minimum Wage for Work*, Journal of Laws, 2002, number 200, item 1679 with later amendments, Article 6. 1679.

¹⁵ *Regulation of the Council of Ministers of 11 September 2013 on the Amount of the Minimum Wage for Work in 2014* (Journal of Laws Dz.U. 2013, item 1074).

applied to employees whose length of service is shorter than a year. In 2015, they earned only PLN 1,400 gross. The minimum wage in 2016 is PLN 1850 gross. So, having deducted health and social insurance contributions and withholding tax, the low paid workers received about 1355 PLN net.

Table 1. Dynamics of the minimum wage and the average monthly remuneration in the business enterprise sector in 2000–2015

Years	Minimum wage	Dynamics %	Average monthly remuneration gross in the business enterprise sector	Dynamics %	Share of the minimum wage in average remuneration
2000	700	100.0	1923	100.0	36.4
2001	760	108.6	2203	114.6	34.5
2002	760	108.6	2277	118.4	33.4
2003	800	114.3	2342	121.8	34.1
2004	824	117.7	2439	126.8	33.8
2005	849	121.3	2516	130.8	33.7
2006	899	128.4	2644	137.5	34.0
2007	935	133.6	2888	150.2	32.4
2008	1126	160.9	3186	165.7	35.3
2009	1276	182.3	3325	172.9	38.4
2010	1317	188.1	3435	178.6	38.3
2011	1386	197.6	3605	187.5	38.4
2012	1500	214.3	3728	193.9	40.2
2013	1600	228.6	3837	199.5	41.7
2014	1680	240.0	3980	207.0	42.2
2015	1750	250.1	4121	214.3	42.4

Source: authors' own research based on www.wynagrodzenia.pl (access 20.01.2015).

In 2015, the minimum wages were 2.5 times higher than in 2000, while the average remuneration within that period went up by 114.3%. By 2008, the average remuneration in the business enterprise sector was growing faster than the minimum wage, which resulted in the decrease of its share in the average remuneration. While in 2000 the share of minimum wage in the average remuneration was 36.4%, in 2007 the share declined to 32.4%. Since 2009 the minimum wage has demonstrated greater dynamics of growth than the average remuneration. The average annual growth rate of the minimum wage in the years 2009–2015 was around 5%. It must be noted that in 2012 the minimum wage in relation to the previous year went up as much as 8.2%. The faster growth of the minimum wage compared to the growth of average remuneration resulted in the growth of the minimum wage's share in the average remuneration. In 2015, this share was 42.4%.

It must be remarked, however, that the average monthly remuneration in Poland calculated by GUS is an approximate value and does not reflect in an unambiguous manner the average remuneration of employees. Since the national average is calculated only on the basis of data from companies employing more than 9 persons. Therefore the data concern about 40% of employees. The remaining employees

work in companies employing fewer than 9 persons. Additionally, the average remuneration is usually overstated in connection with high wages of persons who earn the most¹⁶.

Table 2 presents the level of minimum wages and their dynamics in several dozen countries of the world analysed by Eurostat. The minimum wage is in force in 22 countries of 28 EU states. Disproportions in the lowest permissible wages for permanent staff in the EU are large. In Bulgaria, the minimum wage is only Euro 194, while in Luxemburg it is Euro 1923, that is nearly 10 times more.

Table 2. Monthly national minimum wages EUR/month

Countries	2008	2009	2010	2011	2012	2013	2014	2015	Dynamics 2008=100
Belgium	1309.60	1387.50	1387.50	1415.24	1443.54	1501.82	1501.82	1501.82	114.7
Bulgaria	112.49	122.71	122.71	122.71	138.05	158.50	173.84	184.07	163.6
Czech Republic	300.44	297.67	302.19	319.22	310.23	318.08	309.91	331.71	110.4
Germany								1473.00	–
Estonia	278.02	278.02	278.02	278.02	290.00	320.00	355.00	390.00	140.3
Ireland	1461.85	1461.85	1461.85	1461.85	1461.85	1461.85	1461.85	1461.85	100.0
Greece	794.02	817.83	862.82	862.82	876.62	683.76	683.76	683.76	86.1
Spain	700.00	728.00	738.85	748.30	748.30	752.85	752.85	756.70	108.1
France	1280.07	1321.02	1343.77	1365.00	1398.37	1430.22	1445.38	1457.52	113.9
Croatia		373.46	385.48	381.15	373.36	372.35	395.67	395.61	105.9
Latvia	229.75	254.13	253.77	281.93	285.92	286.66	320.00	360.00	156.7
Lithuania	231.70	231.70	231.70	231.70	231.70	289.62	289.62	300.00	129.5
Luxemburg	1570.28	1641.74	1682.76	1757.56	1801.49	1874.19	1921.03	1922.96	122.4
Hungary	271.96	268.09	271.80	280.63	295.63	335.27	341.70	332.76	122.4
Malta	617.21	634.88	659.92	664.95	679.87	697.42	717.95	720.46	116.7
Netherland	1335.00	1381.20	1407.60	1424.40	1446.60	1469.40	1485.60	1501.80	112.5
Poland	313.34	307.21	320.87	348.68	336.47	392.73	404.40	409.53	130.7
Portugal	497.00	525.00	554.17	565.83	565.83	565.83	565.83	589.17	118.5
Romania	139.59	149.16	141.63	157.20	161.91	157.50	190.11	217.50	155.8
Slovenia	538.53	589.19	597.43	748.10	763.06	783.66	789.15	790.73	146.8
Slovakia	241.19	295.50	307.70	317.00	327.00	337.70	352.00	380.00	157.6
United Kingdom	1242.24	995.28	1076.46	1136.22	1201.96	1249.85	1251.05	1378.87	111.0
Montenegro							288.05	288.05	
Macedonia						199.48	213.62	213.72	107.8
Albania							156.92	156.92	
Serbia						239.24	235.30	235.04	
Turkey	354.34	309.94	338.33	384.89	362.84	415.52	361.76	424.26	119.7
United States	688.81	815.79	872.32	940.48	971.22	952.46	911.22	1036.06	150.4

Notes: In the event of 8 countries considered in the ranking, wages have been converted into Euro from national currencies (Poland, Croatia, Hungary, the Czech Republic, Romania, the UK, and the US).

Source: Eurostat ec.europa.eu (access 20.01.2016).

¹⁶ www.abc-podatki.pl (access 23.01.2016)

The greatest minimum wage is paid to employees employed in Luxemburg, Belgium and the Netherlands. The lowest wage minimum is in force in Bulgaria and Romania. In the EU there are only 6 countries that have not introduced a lower limit for remuneration. These countries are: Denmark, Italy, Cyprus, Austria, Finland and Sweden. The national minimum wage was also in force in the following candidate countries for EU: Albania, Montenegro, Macedonia, Serbia and Turkey.

The minimum wage in Germany has been in force only since 2015, is identical across the entire country and amounts to 8.50 Euro/hour. As a result of the introduction of the minimum wage German employees will be protected against wage dumping, while foreign employees against lowering remuneration particularly for seasonal workers. Several groups of employees were excluded from the regulations: youth under the age of 18, apprentices and trainees with short-term employment, and persons who were long-term unemployed before taking up new employment. By the end of 2016 the new regulations are not in force in some industries either.

The countries presented in Table 2 can be divided into four groups:

- countries in which the minimum wage does not exceed Euro 500,
- countries in which the minimum wage ranges from Euro 501 to 1000,
- countries with the minimum wage between Euro 1001 and 15000,
- countries in which the minimum wage is above Euro 1500.

The most numerous group (15 countries) are the countries where the minimum wage does not exceed Euro 500. This group includes Poland, where the average remuneration in January 2015 was Euro 410. The second group contains Greece, Spain, Malta, Portugal and Slovenia. The third group is composed of developed countries such as Germany, France, the UK, Ireland and the US. The highest minimum wage is in force in the Benelux countries: Belgium, the Netherlands and Luxemburg.

Analysing the dynamics of growth of the minimum wage it must be emphasised that in the countries with a high minimum wage the growth of wages in 2008–2015 was considerably lower than in the low-wage countries. The growth of wages in those countries varied from 10 to 20%. Minimum wages in Ireland have stayed at the same level since 2008, while in Greece, as a result of the crisis, the wages went down by 14%. The highest growth of the minimum wage in the period under examination was recorded in Bulgaria (63.6%). Minimum wages went up by more than 50% in a group of post-communist countries such as: Slovenia (57.8%), Latvia (56.7%), Romania (55.5%), Slovakia (46.8%) and Estonia (40.3%). In the analysed period the minimum wages in Poland increased by nearly 31%.

Table 3 presents a share of the minimum wage in the average remuneration in particular European countries. The most complete data concerning the problem under analysis refer to 2013. In 2013, the minimum wage exceeded 50% of the average remuneration only in Luxemburg (50.4%) and in Slovenia (53.2%). A large proportion, within the range of 45–50%, of the minimum wage in the average remuneration exists in such countries as Turkey, France, Lithuania, Malta and Serbia.

The most numerous group, including also Poland, are countries where the minimum wage constitutes 40–45% of the average remuneration. They are: Serbia (45%), Belgium (44.7%), Poland (44.6%), Ireland (43.7%), Hungary (43.3%), the Netherlands (43.3%), Portugal (42.9%), UK (42.9%) and Lithuania (42.0%). Minimum wages constituting 40% of the average remuneration exist in seven countries: Bulgaria, the Czech Republic, Estonia, Spain, Croatia, Romania and the US. The lowest share of the minimum wage in the average remuneration among the countries under analysis is characteristic for the US.

Table 3. Monthly minimum wage as a proportion of average monthly earnings (%)–NACE Rev.2 (from 2008 onwards)

Description	2008	2009	2010	2011	2012	2013	2014
Belgium	47.3	45.8	44.7	44.3	46.1	44.7	z
Bulgaria	40.6	39.1	36.3	35.5	37.8	39.2	41.4
Czech Republic	35.2	34.3	33.3	32.4	31.6	32.6	33.0
Estonia	34.8	36.4	35.5	33.5	33.0	34.6	35.9
Ireland	41.5	44.9	44.7	44.5	44.1	43.7	43.7
Greece	48.9	46.6	43.4	56.4	z	z	z
Spain	37.6	37.6	37.8	36.7	36.4	36.1	36.0
France	46.5	47.0	46.5	46.2	47.1	46.9	z
Croatia	37.6	37.9	38.0	37.5	37.0	37.5	38.8
Latvia	37.4	41.3	41.9	44.8	43.4	42.0	44.1
Lithuania	40.2	42.4	43.6	42.6	42.0	48.3	45.4
Luxembourg	z	47.8	48.6	49.3	49.5	50.4	50.3
Hangary	38.8	38.3	38.0	38.6	42.5	43.3	43.3
Malta	50.6	47.2	47.4	47.8	46.7	47.5	46.9
Netherlands	44.2	43.9	44.7	43.6	43.3	43.3	z
Poland	39.1	42.2	42.0	41.7	43.8	44.6	45.4
Portugal	44.2	42.8	42.4	42.2	42.9	42.9	44.1
Romania	31.3	34.9	32.4	35.4	34.1	36.3	z
Slovenia	43.4	44.2	50.5	51.7	52.2	53.2	52.9
Slovakia	33.6	35.7	36.0	36.1	35.6	36.0	35.4
United Kingdom	38.2	38.6	38.7	39.1	39.7	40.1	41.4
Serbia	36.0	49.5	46.6	45.2	46.6	45.0	44.0
Turkey	z	z	50.9	z	z	50.0	z
United States	z	z	z	z	z	30.3	z

Notes: (z) – not applicable.

Source: Eurostat –Data Explorer (earn_mw_avgr2), (access 20.01.2016).

Table 4. Minimum wage in January 2015 (EUR per month and PPS per month)

Country	Euro/ per month	Rank- ing	Relation- ship, % country/ Poland	PPS per month	Rank- ing	Relation- ship, % country Poland	Range PPS/EUR
Albania	157	1	38.3	309	1	41.9	196.8
Bulgaria	184	2	44.9	380	2	51.5	206.5
Macedonia	214	3	52.2	457	5	61.9	213.6
Rumunia	218	4	53.2	384	3	52.0	176.1
Serbia	235	5	57.3	470	6	63.7	200.0
Montenegro	288	6	70.2	513	10	69.5	178.1
Lithuania	300	7	73.2	441	4	59.7	147.0
Czech Republic	332	8	81.0	502	8	68.0	151.2
Hangary	333	9	81.2	593	13	80.4	178.1
Latvia	360	10	87.8	507	9	68.7	140.8
Slovakia	380	11	92.7	536	11	72.6	141.1
Estonia	380	12	92.7	488	7	66.1	128.4
Croatia	396	13	96.6	584	12	79.1	147.5
Poland	410	14	100.0	738	15	100.0	180.0
Turkey	424	15	103.4	739	16	100.1	174.3
Portugal	589	16	143.6	685	14	92.8	116.3
Greece	684	17	166.8	764	17	103.5	111.7
Malta	720	18	175.6	906	19	122.8	125.8
Spain	757	19	184.6	798	18	108.1	105.4
Slovenia	791	20	192.9	949	20	128.3	120.0
United States	1035	21	252.4	1019	21	138.1	98.4
United Kingdom	1378	22	336.1	1114	22	150.9	80.8
France	1458	23	355.6	1337	24	181.2	91.7
Ireland	1462	24	356.6	1238	23	167.7	84.7
Germany	1473	25	359.3	1441	27	195.2	97.8
Netherlands	1502	26	366.3	1363	25	184.7	90.7
Belgium	1502	27	366.3	1374	26	186.2	91.5
Luxembourg	1923	28	469.0	1561	28	211.5	81.2

Source: Eurostat (online data code:earn_mw_cur), (access 20.01.2016).

Table 4 presents monthly minimum wages in force in January 2015. In some countries (e.g. in Germany and the UK) the minimum wage is regulated differently than within a month. Yet, the data are comparable as the Eurostat analysts recalculated the valid rates considering the number of hours worked a month in particular countries.

In terms of the amount of the minimum wage, Poland is ranked 12th among 25 analysed countries, just behind Greece and Portugal. Compared to previous years, Poland was promoted to the group of

countries with an average minimum wage. However, the minimum wage in Poland is 4.7 times smaller than in Luxemburg, where the minimum wage is highest. In several developed countries such as France, Ireland, Germany, the Netherlands and Belgium the minimum wage is nearly four times higher than in Poland. In some EU countries minimum wages are 20 to 50% lower than in Poland. Such countries as Croatia, Slovakia and Estonia have a similar level of the minimum wage as in Poland. It is worth noticing that the minimum wage in Poland is lower than in the countries which have recently been struggling with a financial crisis. Higher minimum wages are paid to employees in Spain (185 per cent of the minimum wage in Poland), Greece (167 per cent) and Portugal (144 per cent). In seven EU countries the state-regulated minimum wage is higher even than in the US, where, after being converted into EU currency, it amounts to Euro 1035. It ought to be remarked that in the event of EU member states which do not belong to the Euro zone (Bulgaria, the Czech Republic, Hungary, Poland, Romania and the UK), as well as in case of Albania, Macedonia, Serbia and Turkey, the value and classification of minimum wages expressed in Euro are affected by exchange rates.

Differences in minimum wages decrease, however, if we consider a level of prices within particular countries, that is the so-called standard purchasing power (PPS). While minimum wages expressed in Euro in Germany were 3.6 times higher than in Poland, a German employee remunerated according to the lowest wage expressed in PPS gets only twice more than an employee in Poland receiving the minimum wage.

In countries such as Bulgaria, where the minimum wages are low, but at the same time the prices of products and services are relatively low, the purchasing power of the minimum wage is growing. While in Luxemburg prices are relatively high, thereby the purchasing power of money is a bit lower than the nominal power. A gap between a monthly minimum wage expressed in Euro and a wage according to PPS between particular countries is very wide. In Albania, Bulgaria, Macedonia and Serbia wages measured in PPS are twice higher than minimum wages expressed in Euro. In several countries (Romania, Montenegro, Hungary and Turkey), as well as in Poland, this spread is between 70% and 80%. In the Czech Republic, Lithuania, Latvia, Slovakia and Croatia the differences in the spread between the analysed categories are smaller and are between 40–50%. Characteristic is a lower purchasing power of minimum wages in the UK, Ireland, France, the Netherland, Belgium and Luxemburg.

For and against the minimum wage

The officially established level of the minimum wage, and in particular its increases, generates labour costs paid by the entrepreneurs. In the conditions where the minimum wage goes up, some enterprises, instead of lowering remuneration so that its level corresponds to the statutory minimum, reduce the employees' working time. This action is to leave their previous pay in a relevant proportion to the minimum wage. Although such an action must be preceded by giving notices of termination to employees, and then introducing new working conditions as part of a new employment contract or making changes by the employer in an annex to a binding employment contract, such practices are pretty common in commercial chains.

It must be also added that the rate for night work goes up along with the growth of the minimum wage, which must be higher at least by 20% in relation to the daily rate. Considering the fact that an average employee works 168 hours a month, then, with the minimum wage of PLN 1680 in 2014, the daily hourly rate was PLN 10 gross, while the night rate PLN 12. An allowance for night work is included in the basis for calculating the minimum wage. This solution is unfavourable for employees getting the lowest remuneration as the employee working at night gets actual compensation for the stress level connected with it only when their remuneration exceeds the minimum wage amount.

The minimum wage increase affects also the amount of the severance pay in the event of collective redundancies. Since in legal solutions an upper limit of compensation has been established for an

employee terminated on the grounds related to the employing establishment. It is 15 times the minimum wage. These provisions are applied in the situation when in the enterprise there are no more favourable provisions governing the problem resulting from collective labour agreements.

When increasing the minimum wage the employers are also obliged to pay higher damages to employees who engage in unequal treatment, discrimination or workplace bullying. Since the lowest compensation for breaching regulations in this respect amounts to a one-month minimum wage.

Additionally, the enterprises that are temporarily forced to discontinue work due to the economic crisis will pay their employees higher compensation for outage. This remuneration amounts to 60% of the employee's pay, but the amount cannot be lower than the minimum wage.

The minimum wage affects also the level of social insurance contributions (ZUS) for new business entities paying them on preferential conditions. The consequence of this rise will be increase of the reduced rate of social insurance for entrepreneurs.

“Too high minimum wage hinders the creation of new job opportunities, particularly in small companies, in regions which are relatively poorly developed economically. In particular this concerns young people and employees with low qualifications. A higher minimum wage discourages employers from employing employees legally, hence pushing some persons into the grey zone economy. It also strengthens the incentives for employers to use civil law contracts instead of employment contracts based on the code.”¹⁷ In the most developed regions and cities in Poland, the minimum wage does not have a considerable influence on the size of demand for work as an average level of remuneration is quite high there. Situation is different, however, in poorly developed provinces in which the minimum wage uniform for the entire country constitutes a high percentage of average pays. For example, in the Mazowieckie province the relationship of the minimum wage to the average wage in industry is 36%, while in the Warmińsko–Mazurskie Province 50%.

Even a higher relationship of the minimum wage to the average wage exists in some service sectors and inefficient areas of industry. In retail trade and catering, the minimum wage exceeds 60% of the average remuneration, while in the clothing manufacturing sector it is more than 70% of average wages.

Conclusion

In conclusion, the minimum wages in Poland are systematically going up. Also a share of the minimum wage in the average wage is growing. In 2015, these wages were 2.5 times higher, and the average wage 2.1% higher than in 2000. The share of the minimum wage in the average remuneration went up within that period from 36.4% to 42.4%. At the same time minimum wages in Poland grow faster than in developed countries. The growth of wages in those countries varied from 10 to 20%. Minimum wages in Ireland have stayed at the same level since 2008, while in Greece, as a result of the crisis, the wages went down by 14%.

In the analysed period the minimum wages in Poland increased by nearly 31%. The highest growth of the minimum wage in the period under examination was recorded in Bulgaria (63.6%). Comparing the monthly minimum wage expressed in Euro it must be noticed that it is nearly 5 times lower than in Luxemburg, and 3.6 times lower than in Western European countries. Much smaller differences exist among countries when wages expressed in PPS are considered. Minimum wages in Poland are only twice smaller than in Germany, and 80% lower than in some developed countries. The decline in disparities between monthly minimum wages expressed in Euro and PPS is a result of differences in the purchase price of the goods and services.

¹⁷ W. Wojciechowski, R. Sadoch, *Placa minimalna budzi emocje [Minimum Wage Evokes Emotions]*, Rzeczpospolita dated 18 July 2014, p. B8.

Apart from the increase of the minimum wage to PLN 1850 gross for the employees employed on a permanent basis in 2016, other changes in the area of minimum wage in Poland are planned. They concern in particular the introduction of a minimum rate of PLN 12 gross for civil law contracts.

The proposed solution has both pros and cons. There is, however, a considerable risk that some employers would like to circumvent the application of this law. Since companies may employ employees weekly or monthly, thus avoiding the payment of PLN 12 per hour.

These changes are strongly criticised by employers. Since in their opinion they are impermissible, as they interfere with the freedom of making and shaping civil law contracts. Employers' position is less rigid as regards the matter of increasing the minimum wage for persons starting their careers. The new regulations will guarantee all employees, regardless of the length of service, the right to 100% of the minimum wage.

Generally, very fast increase of the minimum wage may result in negative consequences on the labour market. The wage increase pace should not be conditioned on the GDP growth only, or the level of inflation, but on the growth of productivity at work too.

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Marta Kołodziej-Hajdo

AGH University of Science and Technology, Poland

INSTITUTIONAL AND LEGAL CONDITIONS OF PUBLIC–PRIVATE PARTNERSHIP IN POLAND

Summary

For the last few years in Poland the popularity has been growing of a cooperation model between the public and the private sector – public–private partnership. Its development and success requires an appropriate jurisdiction, as well as institutional and financial support. The purpose of the paper is to point out the essence of this cooperation and discuss legal and institutional conditions for development of this formula in Poland. Attention has also been paid to the growing popularity of hybrid PPP models. The paper makes use of the achievements of literature, government institutions' research reports related to public–private partnership, supplemented with the author's own considerations and experience from participation in implementing such projects.

* * *

Introduction

Different forms of public–private partnership have been popular for years in Europe as well as in many countries of the world. The use of this form of transaction for the purposes of implementing public projects is supposed to, among others, ensure more efficient and effective management of public organizations. An impulse to use such a solution was, on the one hand, common lack of resources, especially financial ones, while, on the other hand, an increasing demand for new and high quality and available public services. Introduction of this model of pursuing investment projects to the practice of public organizations has made it possible to implement knowledge, skills and solutions in this respect, which were available only to private entities before.

This form of cooperation of the public and the private sector, is characterized by complex structure in the following aspects: institutional, legal, financial and social. Many factors determine how the model of cooperation and financing in a PPP transaction will be like. First of all, this formula results from different political, economic as well as legal conditions that are applicable in a given time and place. In addition, differences may be caused also by needs or practices typical of the economy sector where partnership is to be applied. Certainly, in spite of the abovementioned discrepancies, in these transactions we are dealing with a number of similarities, which let us indicate a typical PPP formula.

The purpose of this paper is to present the idea of public–private partnership, indicating legal and institutional conditions that are related to this formula of cooperation in implementing investment projects in Poland. Possibilities have been indicated that are related to the present combination of European funds with public – private partnership in the so–called hybrid projects. On the one hand, this is a form of acquiring funds from an additional source, but at the same time one of the most complex forms of pursuing investment projects.

Essence of PPP

Public–private partnership, practiced for years in many countries all over the world, has recently been considered to be one of the most beneficial forms of implementing investment and infrastructural projects. In Europe it is most popular in Great Britain, Portugal and Spain. Among countries outside Europe the leaders are the USA, Canada, Australia and New Zealand¹.

Public–private partnership is a form of cooperation of the public and the private sector, whose goal is to ensure financing, construction, management and maintenance of infrastructure facilities or provision of public services. It is a complex form of cooperation, which aims to achieve common benefits. This means that elements of commercial activity can emerge, next to the realization of social objectives. The basic feature of PPP is to achieve as large financial commitment of the private partner in the project as possible. Public–private partnership formula has different definitions.

The PPP formula is means of fulfilling obligations that public authorities have towards the society². E.S. Savas, considered as one of PPP “fathers”, in his publications and public addresses, defines PPP as: “common public–private agreement that connects – more than conventional contracting by the public party – different advantages (strengths) of both sectors for delivery of public services and satisfaction of people’s needs”³.

The Polish Act on public–private partnership states that: “the object of public–private partnership is joint implementation of a project based on division of tasks and risks between the public entity and the private partner”⁴.

There are many diverse definitions of public–private partnership, also owing to the fact that this notion is used not only by legislation in many countries, the sciences of law and economics, but also documents of many international organizations⁵. Only the most important of them will be mentioned here.

According to the European Commission, public–private partnership means cooperation of the public and the private sector, to realize objectives traditionally performed by the public sector. This model has to bring benefits to both parties, dividing tasks and risk so as to ensure that the special character of a given sector is taken into account. All the tasks may be performed more effectively, as a result of the fact that each sector involved in the project deals with that it does best⁶. UN European Economic Commission assumes that: the essence of cooperation under PPP is delivery of capital by private sector entities which at the same time have the obligation to implement the project in the predefined time.

¹ T. Korczyński, A. Kozłowska, K. Kozłowski, A. Mednis, A. Nowaczek, *Koncesja na roboty budowlane lub usługi a inne formy realizacji inwestycji publiczno–prywatnych*, Wolters Kluwer Polska Sp. z o.o., Warszawa 2010, pp. 40–42.

² B. Korbus, *Partnerstwo publiczno–prywatne*, Urząd Komitetu Integracji Europejskiej, Warszawa 2003, p. 5.

³ M. Hansley, *An Interview with Dr E. S. Savas Public–Private Partnerships: Where Do We Go From Here?*, www.ip3.org (access 3.10.2015).

⁴ Article 1, item 2, the Act of 19 December 2008 on Public–Private Partnership (Journal of Laws of 2009, No. 19, item 100 as amended).

⁵ *What to change to develop public–private partnership in Poland?* FOR Foundation for PIPER, Forum For Economic Education Development, Warsaw, September 2008, p. 9.

⁶ *Guidelines for Successful Public and Private Partnerships*, Brussels, European Commission, 2003.

The public sector remains responsible for delivery of public services to citizens in the scope and at the level that will ensure improved quality of life and economic development⁷.

On the contrary, it is indicated that “public–private partnership is a contract concluded between a unit and entity of the private sector.

As a result of the concluded agreement, skills and resources of particular sectors (public and private) are used for the purpose provision of services or devices for use by the general public”⁸. The above presented definitions indicate that there is no one, generally adopted notion of PPP.

One can also often note large discrepancies in defining the object, nature of partnership as well as the purpose of cooperation. The debate over the terminology with regard to defining PPP reflects the evolution of the concept of PPP as well as changes taking place in the regulatory systems concerning this issue in EU countries. It is, however, beyond doubt that PPP implies joint action of the public and the private sector when executing a given project of public character, which is based on a one–of–the–kind division of tasks and risks.

Legal conditions

Poland, as the third country in the European Union, has decided to regulate, in the form of a legal act, the principles of functioning of public–private partnership. Currently the Polish law indicates two basic acts governing cooperation between public entities and private partners. These are:

- the Act of 19 December 2008 on Public–Private Partnership (Journal of Laws of 2009, No. 19, item 100 as amended.), hereinafter referred to as the PPP Act,
- the Act of 9 January 2009 on the licence for construction works or services (Journal of Laws of 2009, No. 19, item 101, No. 157 item 1241 as amended), hereinafter referred to as the Licences Act.

The purpose of the aforementioned legal acts is to facilitate the implementation of public tasks on the basis of cooperation of the public and the private sector in Poland. However, it should be pointed out that apart from the mentioned ones, also in other legal acts the Polish law indicates the possibility of inter–sector cooperation. Here mentioned should be, though only with regard to paid motorways, the Act of 27 October 1994 on toll motorways and on the National Road Fund⁹. Cooperation between the public and the private sector has also been provided for in the law of public orders¹⁰, the Act on real property management¹¹, the Act on municipal economy¹², or the Act on public benefit activities and voluntary service¹³.

According to the PPP Act, the parties may shape the terms of cooperation on the basis of the freedom of contracts. Also, no subject matter of partnership is imposed, thanks to which the catalogue of projects that can be implemented under PPP formula is quite extensive. Projects may concern:

- of construction,
- refurbishment of a building facility,
- provision of services,

⁷ United Nations Economic Commission for Europe, *Guidebook on Promoting Good Governance in Public–Private Partnerships*, New York–Geneva 2007, p. 1.

⁸ www.ncppp.org (access 10.10.2015).

⁹ *Act of 27 October 1994 on toll motorways and on the National Road Fund* (Journal of Laws 2015, item 641, 901).

¹⁰ *Act of 29 January 2004 – Public Procurement Law* (Journal of Laws 2014, no. 19, item 177 as amended).

¹¹ *Act of 21 August 1997 on real estate management* (Journal of Laws 1997, no. 115, item 741 as amended).

¹² *Act of 20 December 1996 on municipal management* (Journal of Laws 1997, no. 9, item 43 as amended).

¹³ *Act of 24 April 2003 on public benefit activities and on voluntary service* (Journal of Laws 2003, no. 96, item 873 as amended).

- completion of a job, in particular consisting in equipping an asset component with devices increasing its value or usability,
- other benefits, connected with maintenance or management of a property component, which is used for implementation of a public–private project or is connected with such a project¹⁴.

What is important from the point of view of financial limitations of the public sector is that the regulations accept the possibility of financing PPP projects using the European funds, the so-called hybrid projects, which have been reflected in the provisions concerning project financing with EU funds in the financial perspective 2014–2020.

Conclusion of public–private partnership contracts is also regulated by The Act on licenses. This legal act has substantiation, purpose and measures for implementation of infrastructural investment projects similar to the Act on PPP. It differs from the PPP Act mainly in the procedure for selection of a private partner. According to the stipulations of the Act on licenses the licence contract consists in the fact that the concessionaire (private partner) under a licence agreement concluded with the licensor (client/public entity) undertakes to perform the object of the licence for remuneration, which is in the case of:

- license for construction works – only the right to operate a building facility, including collection of benefits, or such a right along with payment to the licensor,
- licence for services – only the right to perform services, including collection of benefits, or such a right along with payment to the licensor. The licensor's payment to the licensee may not lead to recovery of all expenditures incurred by the licensee, associated with performance of the licence.

The license for construction works as well as the licence for services are specific institutions related to public orders. A feature distinguishing licenses from "classic" orders is the form of remuneration for the contractor.

Public–private partnership can thus take the form of: PPP as a licence, or PPP as a public order. Additionally, licence contracts can function in business practice regardless of the PPP model. To sum up the discussion, several basic criteria can be indicated, differentiating these two approaches to collaboration between the public and the private sector. They are shown in Table 1.

Therefore, if structure of the intersectoral project assumes contractor's implementation of construction works for remuneration and operation of their outcome, or only provision of services based on the asset component being public property, given that the contractor's remuneration will come entirely or in its vast majority from fees from users and the contractor shall bear the risk of investment failure, in such case we are dealing with licence. When the shape of cooperation between the public entity and the private partner consists only in transfer of an asset component, without any clear division of tasks and risks, or only division of tasks, or the purpose of the contract does not result directly from the public entity's statutory responsibility, then selection of the contractor will not be subject to formalized licence and order regulations.

¹⁴ Article 2. Item 4 of the PPP Act.

Table 1. Differences between PPP and license

Criteria	PPP	Licence
Remuneration	Private partner's remuneration may come entirely from public funds.	Licensee's remuneration, as a principle, comes from fees from the contract object beneficiaries.
Risks	Freedom in shaping risks categories between entities.	The main part of economic risk of performing the licence is borne by the licensee.
Parties' obligations	PPP contracting parties' obligations are subject to relatively wide freedom of contracts.	Licensee's obligation is concerned with: design, building, financing and operation or only financing and operation of the licence.
Ownership of an asset component used as the subject matter of the contract after its expiry	Asset component (regardless of who was its primary holder), as a principle, is transferred to the public entity. The private partner shall retain the right to be refunded the equivalent of the contributed asset component, also has the pre-emption right for the real estate being their own contribution to the contract, as well as the right of repurchase. PPP contract may, however, envisage otherwise.	Asset components provided by the licensor at the disposal of the licensee (apart from remuneration), as well as outlays brought thereby for the object of the licence during the contract and following its termination, shall remain the property of the licensor.
Possibility of establishing a company	There is such possibility.	There is no such possibility.
Effective term of the Contract	Maximum duration of the contract is not specified, but it should not be excessively long.	Contract for a definite time, no longer than: 30 years – in the case of construction licence, no longer than: 15 years – in the case of licence for services.
Consent of competent authorities	Some PPP contracts require approval of the competent minister for public finance.	Not required.

Source: author's own research based on www.paiz.gov.pl/files/?id_plik=16912 (access 26.10.2015)

Institutional conditions

Depending on the scope or nature of the project, there are various entities taking part in it, such as state administration units, local government units, communal companies, SPV companies, non-governmental organizations or foreign entities. They perform different functions, being public or private partners, each of whom, depending on the situation, assumes a varying part of risks and profits. The beneficiary may be a public entity that initiates the works on the project, but also a private partner that has been selected for its implementation¹⁵.

¹⁵ *Partnerstwo publiczno-prywatne w nowym okresie programowania (2014– 2020). Komentarz do przepisów Rozporządzenia Ogólnego na lata 2014–2020 w zakresie partnerstwa publiczno-prywatnego*, Platforma Partnerstwa Publiczno–Prywatnego, Warszawa 2013, pp. 8–9.

However, next to the entities directly involved in implementation of the project under a public–private partnership, we are dealing with many promoting institutions, supporting this form of inter–sectoral cooperation. In Poland over the past several years increase can be observed in the number of activities aimed at convincing local governments to become interested in public – private partnership. Numerous conferences devoted to this field are organized and system projects are implemented by public institutions interested in the development of PPP. One of the main factors that has contributed significantly to PPP market development in Poland was establishment of an institutional support system. Since the new Act on PPP came into force, many entities have been established, operating both in public and private sectors, propagating the idea of public – private partnership and offering advisory services. In this way the institutional system has started to operate and grow, supporting development of public – private partnership.

The group of institutions supporting public–private partnership can be divided into three categories:

1. Entities being members of government administration which include: Ministry of Economy; Polish Agency for Development of Entrepreneurship; Ministry of Infrastructure and Development; General Directorate of National Roads and Motorways; Ministry of Finance; other central offices e.g. : National Statistical Office, Regional Accounting Chambers, Public Procurement Office; Bank Gospodarstwa Krajowego.
2. Non–governmental organizations supporting PPP, in particular: Foundation Centrum PPP; Public–Private Partnership Institute; Polish Bank Association; Business Centre Club BCC; British – Polish Chamber of Commerce; French Chamber of Industry and Trade; Foundation Pro Economicus Construction Club.
3. Foreign entities including: European PPP Centre ; TOS – PPP – UN Economic Commission for Europe; Partnerschaften Deutschland ÖPP Deutschland AG; World Bank.

As one can see, the number and the nature of the institutions is very diverse. These entities pursue different tasks in the scope of popularizing the public–private partnership formula, which include:

- popularization of the PPP idea,
- popularization and promotion of PPP,
- preparation of studies and reports evaluating PPP operation, including the condition and prospects for private sector's financial commitment,
- dissemination of knowledge about PPP,
- substantive assistance for public entities,
- access to information, documents supporting preparation and implementation of PPP,
- creating conditions shortening the time of preparing projects,
- education and training,
- improving competences of public entities with regard to PPP,
- keeping a database of PPP projects,
- actions stimulating cooperation with regard to implementation of PPP projects, encouraging public and private entities to cooperate and divide risks etc.¹⁶.

Institutional support is thus substantial, which proves validity of this form of cooperation not only on the national, but also international level.

Hybrid projects in Poland

A diverse and wide range of projects which can be executed in the PPP formula results in the fact that they require substantial financial outlays. These funds may be provided by a private entity, but

¹⁶ *Raport partnerstwo publiczno–prywatne w Polsce w latach 2009 – 2011*, Platforma Partnerstwa Publiczno–Prywatnego, Warszawa 2012, pp. 55–75.

also a public entity, and bank credit has often a considerable part in this financing. An important source of support may be European funds present in Poland, due to the fact that the country currently makes intensive use of them. Projects implemented with the help of these are defined as hybrid projects. In such financing model European funds supplement private funding. Projects that combine the PPP model with EU funds are subject at the same time to PPP rules and the principles governing European funds. Therefore, apart from the need to fulfil the requirements as stipulated in the PPP Act or the Licences Act, such projects are bound by the rules for designing and settlement as defined for a given operational program co-financed with European funds. First such projects were implemented in the financial perspective 2007–2013. The present perspective 2014–2020 should be a breakthrough for hybrid projects, due to clear, precisely specified definitions, principles and requirements for this type of projects. It is important to remember that the specific character of these projects results in that they carry additional risks, which include the risk of grant level, risk of returning European funds or the risk of project durability and the risk of important changes in the project, as any such changes must be accepted by the European Commission. Presently, few hybrid projects have been identified in Europe. European PPP Expertise Centre (EPEC) has identified only 49 such projects in Europe¹⁷, and 16 of them have been completed or are being implemented in Poland or are in preparation, for the total amount PLN 4 005 million (see Table 2).

Table 2. Hybrid projects in Poland in the period 2007–2013

Item	Project name /implementation stage	Gross project value [PLN million]	European funds [PLN million]
1.	Mineral swimming pools complex in Solec–Zdrój /project in operational phase	20	7
2.	Revitalization of the Railway Station and nearby areas in Sopot/ project implemented	116	42
3.	Construction of Wielkopolska Backbone Network and management of its infrastructure / project implemented	410	284
4.	Waste Management System for the City of Poznan / project implemented	925	330
5.	Management of Sosnowiec Science and Technology Park (SPNT) / project implemented	34	26
6.	Sports infrastructure management on Dębowiec slope in Bielsko–Biala/ project implemented	61	45
7.	Broadband network of Eastern Poland – Warmińsko–Mazurskie province / project implemented	327	226
8.	Małopolska Broadband Network / project preparation	192	54

¹⁷ http://www.eib.org/epec/resources/project_stocktake_eu_funds_in_ppps_public.pdf (access 26.10.2015).

9.	Broadband network of Eastern Poland – Podkarpackie province / announcement for partner selection	322	223
10.	Complex thermal modernization of educational buildings in Świdnica Commune in public–private partnership formula / implementation (construction)	5	2
11.	Internet for Mazovia / implementation (construction)	493	341
12.	Broadband network of Eastern Poland – Lubelskie province / announcement for partner selection	385	267
13.	Broadband network of Eastern Poland – Świętokrzyskie province / implementation (construction)	201	139
14.	Elimination of information exclusion and construction of the Lower Silesian backbone network / implementation (construction)	215	148
15.	Silesia Regional Backbone Network / implementation (construction)	48	33
16.	Broadband network of Eastern Poland – Podlaskie province / announcement for partner selection	215	174
TOTAL		4 005	2 341

Source: https://www.ppp.gov.pl/Laczenie/strony/Baza_projektow_hybrydowych.aspx (access 20.10.2015).

Projects are implemented first of all under regional programs, but among them there are some also subsidised from nationwide operational programs. The vast majority relate to telecommunications (10 projects), others address waste management, sports and recreation, revitalization and energy efficiency. Projects involving European funds constituted 15.8% of PPP projects in Poland. According to the Ministry of Economy, currently implemented, or completed are 101 projects in the PPP formula¹⁸.

Experience that has been gathered thanks to these 16 projects was the basis for Poland taking initiative in the field of regulation of public–private partnership problems in the financial perspective 2014–2020. It may be a breakthrough for hybrid projects, among others, due to increasing difficulties in obtaining funds for public entities' own contribution in EU projects. However, the main cause of such a forecast are new regulations devoted to the issues related to implementation of hybrid projects, introduced to the content of the Regulation of the European Parliament and the European Council (EU) No. 1303/2013¹⁹

¹⁸ <http://bazappp.gov.pl> (access 20.10.2015).

¹⁹ *Regulation of the European Parliament and the European Council (EU) No.1303/2013 of 17 December 2013 establishing common regulations concerning the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Development of Rural Areas and the European Maritime and Fisheries Fund and establishing the general regulations concerning the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and repealing Council Regulation (EC) no. 1083/2006*, (European Union Official Journal 2013, L 347/320).

concerning cohesion policy in the years 2014–2020. The new regulations have taken the form of a separate chapter that has been introduced to this act. Thus, there is a large likelihood that these changes will contribute to increased activity in implementation of projects in PPP formula in the future.

Conclusion

Actions taken by different business environment institutions and entities, designed to popularize public–private partnership ideas in Poland, should be considered correct and praiseworthy. The current the Act on PPP has provided a clear impulse for the development of this instrument, which is confirmed by the analysis of changes on the Polish PPP market, however conditions are still not entirely clear and friendly for parties interested in such cooperation. Polish law–making authorities should follow marketing and training activities, changing valid acts so as to ensure that cooperation between the public and private sectors is easier, more transparent and not raising legal or financial doubts.

The concept of public–private partnership is not an easy way of conducting an investment project, but if the announced procedure is completed successfully, it may bring a lot of measurable benefits to local authorities. Practice shows that the effect of contracts implemented with the use of PPP is better quality of services, pursuit of limiting costs and expenses, optimization of risks, generation of additional revenues. Long–term experience of Poland has confirmed that with regard to management and implementation, better identification of needs, a competent private partner can provide additional capital, alternative resource utilization skills to the public entity as well as offer value added to the society. The possibility of co–financing PPP projects with European funds is another positive aspect.

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Małgorzata Rutkowska-Podołowska
Wrocław University of Technology, Poland

Anna Kowalska-Pyzalska
Wrocław University of Technology, Poland

Nina Szczygiel
University of Aveiro, Portugal

ECO-INNOVATIVE SUSTAINABLE INVESTMENTS AND A POTENTIAL OF ENVIRONMENTAL INSURANCE

Summary

In recent decades, the importance of sustainable development has been growing considerably as a premise for economic growth, evolution of societies within the rational use and protection of the environment. In the background of sustainable development, the eco-innovation market emerges to riposte a negative impact of human activity on the environment, making, for this purpose, use of innovative methods and technologies. The eco-innovation market in Poland is still in its development phase, but it is expected to expand due to the system of political and regulatory initiatives, as well as the current financial initiatives. Environmental investments, including those innovative ones, comprise, among others, renewable energy sources (RES). In the world of emerging technologies, one cannot forget they carry risks above mere advantages. This paper addresses a new product on the insurance market, the environmental insurance, presenting its potentialities for eco-innovation projects.

* * *

Introduction

Sustainable development has a long tradition and history and dates back to early Greek philosophers, Aristotle and Hippocrates. Over the centuries, most of great economists, to name only a few of them such as Ricardo, Malthus, and Jevonson, while developing their economic theories, posed a foundation for the advances of the concept of sustainable development^{1, 2}. Nowadays, the term ‘sustainable development’

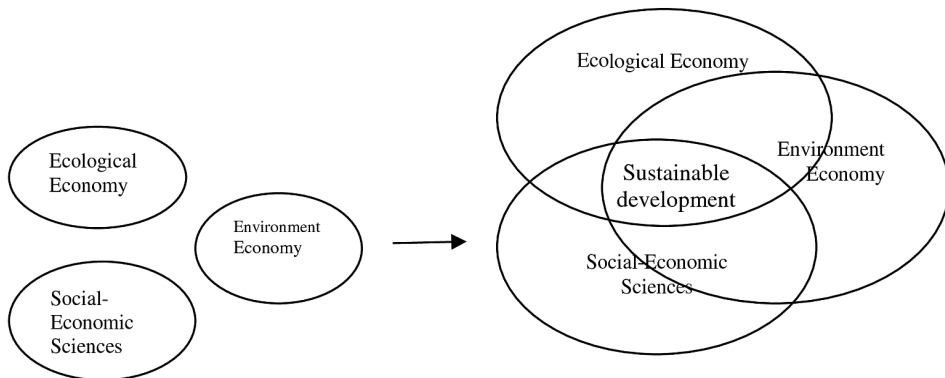
¹ H. Landreth, D.C. Colander, *History of Economic Thought*, PWN, Warsaw 2005.

² J. Siekierski, M. Rutkowska, *Zrównoważony rozwój jako koncepcja w naukach ekonomicznych [Sustainable development as a concept in economic sciences]*. /In:/ *Rozwój Zasobów Kapitału Ludzkiego Obszarów Wiejskich [Development of*

should be understood as viable socio–economic development in the process of integrating political, economic and social aspects, with a delicate balance of nature and durability of basic natural processes, in order to guarantee the ability to meet basic needs of communities or citizens of both, the present and future generations.

Sustainable development occupies a distinct place in economic sciences, especially in environmental economy, ecological economy, and, more recently, in socio–economic sciences (see Figure 1).

Figure 1. Current understanding of sustainable development in scientific disciplines



Source: J. Siekierski, M. Rutkowska, op. cit, p. 365.

Nowadays, sustainable development includes elements not only of ecological economy, which puts a significant role to physical processes, with an emphasis on environmental sustainability and fairness between generations, but also of the economic environment, which has been on the boundary between economics and ecology, and explores the relationship between the process of socio–economic and environmental conditions³. Furthermore, sustainable development also appears in the new social–economic disciplines that take into account social as well as political aspects. This science emphasizes the relevance of integration in the field of economics and ecology, and goes further than integrating sociology and political science, which in turn causes the dissemination of ecological knowledge and social acceptance of environmental policy and sustainable development strategies.

Environmental investments typology

A driving force for sustainable development are investments, including environmental investments. Literature lists different typologies of environmental investments. They are divided into two types, that is^{4, 5}:

Human Capital in Rural Areas], G. Spychalski, M. Malicki (Eds.), University of Szczecin Scientific Publishers, Szczecin 2008, pp. 359–361.

³ M. Blaug, *Teoria Ekonomii [Theory of Economics]*, PWN, Warszawa 1994, p. 34.

⁴ J. Fila, D. Burzyńska, *Inwestycje ekologiczne w przedsiębiorstwie [Ecological investments in an enterprise]*, „Ekologia Przemysłowa”, 2008, no. 2(7–9), p. 34.

⁵ A. Smolińska, *Efektywność inwestowania w oczyszczalnie ścieków w Polsce a wykorzystanie zewnętrznych środków pomocowych [Effectiveness of investment in sewage treatment plants in Poland and the use of external aid]*. PhD Thesis, Poznań University of Economics, Poznań 2011. Retrieved from <http://www.wbc.poznan.pl/Content/187923/SmolinskaAnnaS4248.pdf> (10 September 2014), p. 25.

- ‘End of pipe’ technology investments – not interfering with the production process (production can be carried out without the investment), but reducing or disposing of pollutants produced within the production process. The investments of this sort are municipal and industrial wastewater treatment plants, sewage systems, investments to reduce particulate and gaseous pollutants, selective collection and disposal of waste and the construction of the landfill;
- Integrated anti-pollution investments – leading to a reduction of pollution generated by modifying processes such as replacing or upgrading the production line, purchase of additional equipment, which means that production shall become cleaner and more environment friendly (e.g. investments in renewable energy sources).

Another typology distinguishes direct and indirect environmental investments. The first include construction of new facilities and equipment within the broader environmental infrastructure. The latter encompass activities aimed at technological modernization and technical upgrading of production processes or operating machinery and equipment. The result of such actions is to reduce the emission of pollutants “at source”⁶.

Development of eco-investments

Sustainable development can be considered and implemented at global, international, national and company levels. It can be achieved by making a number of investments in environmental protection and making business activities in an eco-friendly way⁷. The last decades have brought a considerable number of new strategic documents and regulations at the EU level⁸ that require environment protection, promotion of renewable energy sources, increase of energy efficiency and reducing greenhouse gas emissions. Thus, the climate for investors attracted by innovative projects in the field of ecology and energy is encouraging and favourable. Such projects may include investments in:

- wastewater management and water protection, within the climate and atmospheric air, soil protection, waste management, soil conservation, landscape protection and biodiversity, protection against noise, radiation and vibration,
- renewable energy (including wind power, solar power, small hydro, biogas, biomass power plants, etc.), and
- energy efficiency (including thermo-modernization of public and private structures, and energy conservation).

Eco-innovation

It is commonly accepted that the character of today’s environmental investments should be eco-innovative. The concept of eco-innovation founded in the 90’s, is an innovation that improves the efficiency in the use of natural resources in the economy by reducing the negative impact of human activity on the environment and strengthening the economy’s resilience to environmental pressures⁹. Due to their balanced nature, eco-innovation investments have not only environmental but also economic advantages (for example, by reducing costs).

⁶ A. Smolińska, *op. cit.*, p. 26.

⁷ B. Fura, *Nakłady inwestycyjne w ochronie środowiska a realizacja założeń rozwoju zrównoważonego [Capital investments in environmental protection in view of the accomplishment of the sustainable development assumptions]*, „Nierówność Społeczna a Wzrost Gospodarczy”, 2010, no. 17, p. 303.

⁸ Eco-Innovation Observatory. *EIO The eco-innovation challenge: pathways to a resource-efficient Europe*. Brussels 2011.

⁹ A. Szpor, A. Śniegocki, *Eco-innovation in Poland. Current status, barriers to development, support capabilities*, The Institute for Structural Research 2012.

Both, the national authorities and the European Union are important players in promoting the technological development. The implementation of environmental technology is an especially group of means tailored to means and consisted of legislation and currently available economic instruments. In 2004, the European Commission introduced the Eco-Innovation Action Plan, which became the foundation for eco-innovation policy in a number of countries¹⁰. In Poland, the following major programmes and projects, among several regulations, can be distinguished: the National Action Plans, the GreenEvo Green Technology Accelerator Project initiated by the Ministry of Environment and the Operational Programmes: the Infrastructure and Environment, and the Innovative Economy or strategic programs of the National Centre for Research and Development^{11, 12}.

According to the latest market research¹³, the eco-innovation market in Poland, especially the one for environmental technologies, is in its early stages of evolution. The market is facing a number of difficulties related to financial and educational barriers. However, its further growth is forecasted. Institutional measures to support the eco-innovation can be exceptionally helpful in the development of the market. Among the eco-innovation market in Poland the sector of renewable energy is growing particularly rapidly.

Environmental impact of investments in renewable energy sources

A distinctive feature of renewable energy, in comparison to the typical conventional energy, is lack (or a significantly smaller range) of its impact on the environment. This is due both, to the renewal of primary energy (sun, water) and a limited amount of waste emissions, dust and gases^{14, 15}. Among renewable energy sources, those whose impact on nature can be described as non-confrontational and those with associated environmental and spatial constraints can be distinguished. Conflict-RES may include, for example, biomass waste thus waste from agriculture, industry (including wood) and municipal biogas from landfills, sewage treatment plants, and solar power recognized in distributed systems. However, the conflict for the environment can include renewable energy, for instance, wind energy, hydropower, and geothermal resources¹⁶.

Despite the generally environmentally friendly and eco-innovative character of investments of renewable energy, a plan of investment in renewable energy sources is limited by a number of permissions related with an assessment of the impact of the proposed activity on environment¹⁷. According the referred Law, the project is analysed and evaluated from the perspective of its direct and indirect impact on environmental, health and living conditions, the possibility and ways of preventing and reducing negative environmental impacts, and the required range of monitoring¹⁸. Basic categories of exclusions and limitations of location-RES for the protection of the natural environment are: spatial conditions, areas of conservation (e.g. areas covered by the Natura 2000 sites, parks, reserves, etc.), or the protection of

¹⁰ A. Szpor, A. Śniegocki, *op. cit.*, p. 15.

¹¹ A. Szpor, A. Śniegocki, *op. cit.*, pp. 10–17.

¹² The Ministry of Environment. Program Executive for the National Action Plan for Environmental Technologies for the period 2007–2009 with a perspective for 2010–2012. Warsaw 2007.

¹³ A. Szpor, A. Śniegocki, *op. cit.*, pp. 11–12.

¹⁴ M. Ligus, *Efektywność Inwestycji w Odnawialne Źródła Energii. Analiza Kosztów i Korzyści [Efficiency of Investment in Renewable Energy. Cost-benefit Analysis]*, CeDeWu, Warsaw 2010.

¹⁵ F. Wolańczyk, *Elektrownie Wiatrowe [Wind Power Plants]*, KaBe, Krosno 2009.

¹⁶ J. E. Kawałczewska, *Poradnik Ochrony Środowiska dla Małych i Średnich Przedsiębiorstw [Environmental Guide for Small and Medium Enterprises]*, Eko-Konsult, Gdańsk 2006.

¹⁷ *The Environmental Protection Law* (Decree Law from 27/04/2001, Dz.U. 2001, no. 62, position 627 and its amendments).

¹⁸ F. Wolańczyk, *op. cit.*, p. 115.

species and landscape areas of conflict, farm buildings, housing, etc.¹⁹ The main threats identified with the wind power are the risk to birds (bird mortality, decreasing the number of bird populations, loss of habitat), the risk to humans (noise and vibration from the turbines, propellers, turbines), or changes in the landscape. Importantly, the remaining investment in renewable energy may in some way affect the environment, such as hydroelectricity has been linked to construction of barriers on rivers, flooding part of the valley above the barrier, changes in the hydrological regime of the river, or a change of scenery. In addition, hydropower operation may lead to sudden changes in flow rate and water level below the dams, or decrease the population of aquatic organisms. In case of biomass, too large interest in biomass carries a risk of reduced biodiversity of monocultures of energy crops, such as eucalyptus, willow and poplar, and raises the problem of air pollution ash, dioxins and furans, which are carcinogenic and are emitted during the combustion of biomass soaked with pesticides and mixed with waste plastics²⁰.

Frequently, in the preparation phase for the implementation of renewable energy investments, investors forget about possible negative effects that the investment may, eventually, have on the environment. Currently, among many financial tools available to investors the attention leads into ecological insurance, which can be an effective financial instrument for investors in the 'green market' eco-innovation.

Environmental insurance

In the literature, there is little information on environmental insurance. Ecological security is an important instrument of economic and financial environment. The objective of the insurance company is, on the one hand, to improve the environment, but also to impact the economic growth of the country. Environmental responsibility encompasses the prevention of 'a risk to public' (called public hazard), including an associated disaster (including natural disasters). The legislation makes a distinction between two types of environmental responsibilities, with the responsibility for²¹:

- 'Proven guilty' – a classic example of civil liability (included in the civil code of every country) responsibility for potential environmental hazard;
- Responsibility for a potential ecologic threat.

In the environmental insurance policy, there are two conventional rules, pointing either a 'polluter' or a 'victim' as an accountable payer. A characteristic feature of the 'polluter pays' principle is the liability for environmental damage due to the size of the perpetrator who inflicts the damage. Damage is defined as wound in the environmental caused by the environmental impact of two types, namely²²:

- Damage to the environment – is a violation of the public interest. Distinguished here: the environmental costs, loss of benefits associated with environmental pollution, and loss or damage to the environment as a common or a public good;
- Damage to a person or property – that is, the infringement of an individual. In this case, it refers to the cost of environmental degradation, loss of benefits associated with environmental pollution, personal injury, death, or loss of, and damage to natural resources.

From the point of view of environmental insurance relationships with investments, it is essential to consider the ecological damage to individuals or property. Therefore, damage in this case should be based, in accordance with art. 363 of the Polish Civil Code, to restore the previous state of damage of goods or the provision of funds for the loss suffered²³.

¹⁹ J. E. Kawalczevska, *op. cit.*

²⁰ J. E. Kawalczevska, *op. cit.*

²¹ M. Rutkowska, *Ecological insurance in Poland as instrument of environmental policy*. /In:/ H. E. Dny (Ed.), *Podnikání a Rozwoj Regionu*, Univerzita Hradec Králové – Gaudeamus, Hradec Králové 2006, p. 400.

²² D. Maśniak, *Ubezpieczenia Ekologiczne [Environmental Insurance]*, Kantor Publishing Zakamycze, Kraków 2003, p. 119.

²³ *The Civil Code* (Decree Law from 23/04/1964, Dz.U. 1964, no. 16, position 93 and its amendments).

The second of the rules that apply in the insurance scheme is the ‘victim pays’ principle. This principle is important from the point of view of environmental damage, which should be understood as “any harm which marks the general interest and the individual as a result of environmental deterioration”²⁴. Relevant in this case are especially harmful effects on a man and the surrounding environment degradation. Therefore, the Environmental Protection Law²⁵, art. 326, states that: “The entity that repaired the damage to the environment shall have the perpetrator of the damage claim for reimbursement of expenses made for this purpose; the amount of the claim is limited in this case to the reasonable costs incurred to restore the previous state.” It is then essential to comprehend the cost of environmental damage, because the protection of the environment and restoration to the desired state are associated with incurring costs²⁶. The current Polish Law of Business Insurance²⁷ offers a potential to compensate for the environmental damage as a result of the insurance agreements:

- Risk of harm suffered ‘by themselves’ (property – property insurance and personal – personal insurance);
- Risk of liability (civil), in connection with business or owning property incurred ‘by other’ harm: (property – liability insurance and personal – liability insurance).

Despite the fact that according to the law, environmental insurance may function in Poland, its actual expansion is modest, which is due to a variety of reasons, such as²⁸:

- Particular difficulty to assess the risk;
- Existence of so-called hidden risks that cannot be detected even with the state of modern science and technology;
- Threat of an existence of undertaking insurance as a result of poorly estimated risk;
- The necessity to employ experts with special knowledge and making thus costly risk assessments;
- Existence of long-term, continuous and, at the same time, difficult to determine at early stages impacts on environment, emerging eventually impossible to compensate huge loss.

Environmental insurance may cover the loss and damage to the environment impossible to predict that may happen in spite of normal maintenance and operation of equipment used in the environment. In recent years, the scale of commitment for the perpetrators of environmental degradation and ecological damage had increased, so the insurance should be an incentive for economic expansion, rather than hamper development.

Conclusion

According to the forecasts, in the next few years the market of eco-investments (largely eco-innovation) in Poland shall intensively expand. According to the principle of sustainable development, although with a generally positive impact on the environment, these investments could, inadvertently, burden the environment. It is one of the often overlooked investment risks in this type of projects.

In the insurance market, there is a new product called ‘environmental insurance’. According to the authors, there is currently no coherent legal system, which would comprehensively regulate the

²⁴ D. Maśniak, *op. cit.*, p. 217.

²⁵ *The Environmental Protection Law, op. cit.*

²⁶ B. Kryk, *Rachunek Sozoeconomiczny Działalności Gospodarczej na Przykładzie Energetyki Zawodowej Regionu Szczecińskiego [Soseconomic Business Account on an Example of Power Plants in Szczecin Region]*, University of Szczecin, Szczecin 2003, p. 9.

²⁷ *The Insurance Activity Law* (Decree Law from 22/05/2003, Dz.U. 2003, no. 14, position 1151 and its amendments).

²⁸ T.P. Lenart, A. Pietrewicz, *Ubezpieczenia ekologiczne jako instrument przyspieszania proekologicznych przemian w gospodarce [Environmental insurance as a tool for accelerating environmental changes in the economy]*, Kancelaria Brokowska “Lenart”, 1999, pp. 10–14.

responsibility for the damage caused in nature. However, it seems that environmental insurance can be an effective financial instrument for investors in the ‘green market’ eco–innovation.

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Paweł Frączek
University of Rzeszów, Poland

CONDITIONS FOR LITHUANIA'S ENERGY SECURITY

Summary

The aim of the study is to analyze changes in Lithuania's energy policy and to identify and discuss the factors which contributed to the modernization of the energy sector in this country. Particular emphasis has been placed on what conditions improved energy security in the country. It has been stressed that actions taken in this regard were mainly related to improving the security of energy supply, including energy independence from energy supplies from Russia and the fulfillment of obligations related to the implementation of the requirements of the energy and climate package.

The analysis covers changes occurring in the energy policy of Lithuania in the past twenty years. It has been demonstrated that these changes have contributed to improved security of energy supplies. In particular, this was connected with shifting importance to locally sourced energy sources, securing energy supplies from different routes and undertaking activities aimed at reducing energy consumption.

* * *

Introduction

One of the priorities of Lithuania's energy policy is taking measures to increase its energy security. These are particularly hard to reach because of Lithuania's longstanding energy dependence on Russia, which was related to the state's membership in the former Soviet Union and consequently meant that it had limited possibilities to obtain energy resources from outside Russia.

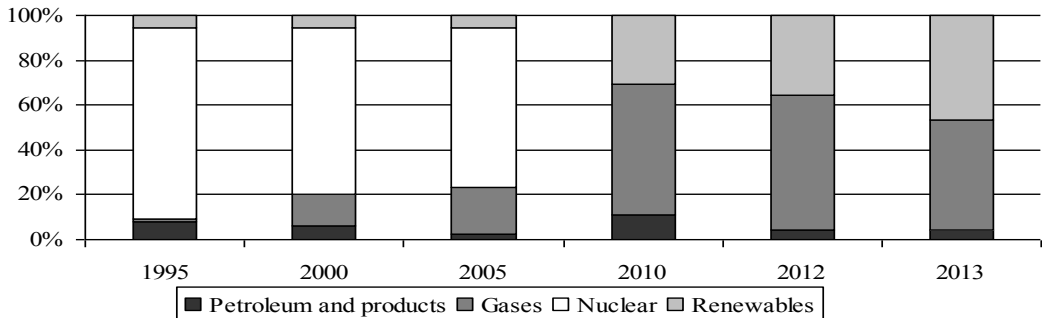
In order to improve Lithuania's energy security after it regained independence, following the collapse of the USSR, steps have been taken to change the country's energy policy. Particularly radical decisions were concerned with the need to close the only Lithuanian nuclear power plant, previously the dominant source of electricity in the country. Of large significance is also the issue of international obligations imposed on the energy sector by the energy–climate package and other EU instruments.

This paper attempts to assess the way such changes in the energy policy of Lithuania contributed to its energy security. In analyzing these issues special emphasis has been placed on changes in the structure of primary energy sources, including the increased role of renewable energy and natural gas.

Conditions to changes in the energy policy in Lithuania

By 2009, Lithuania's energy security¹ was based on energy obtained from its nuclear power plant in Ignalina. By that time nuclear power accounted for approximately 70% of electricity produced in the country (Figure 1).

Figure 1. The structure of primary energy sources in Lithuania in 1995–2013



Source: author's own research based on: EU, *EU energy and transport in figures. Statistical pocketbook*, Directorate-General for Energy and Transport, 2015.

Lithuania's accession to the European Union forced the country to close its only nuclear power plant. The closure of the second reactor of Ignalina power station, due to its similarity to the reactor in Ukrainian Chernobyl power plant, which was considered unsafe, was dictated by the European Commission as a sine qua non condition for the accession of Lithuania to the European Union². This change forced a rapid transformation of the Lithuanian energy sector needing to replace the energy from the nuclear reactor in Ignalina by natural gas and renewable energy sources.

Another consequence of the closure of Ignalina was also Lithuania's suddenly increased reliance on imported energy, which meant drastically compromised energy security of the country (Table 1). Prior to the closure of Ignalina nuclear power station, Lithuania's energy independence was at a level similar to the average for the EU-28. After closing the reactor, its dependency on energy imports increased significantly³. Another threat for the energy security of Lithuania stemmed from the lack of technical possibilities of energy imports from countries other than Russia. This leads to significantly higher than EU-average prices of electricity and natural gas⁴.

¹ Provision of energy security involves all the external and internal conditions pertinent to a country's energy policy. The issue is discussed by K. Żmijewski, *Wymiary energetycznego bezpieczeństwa*, *Energetyka Ciepłna i Zawodowa*, 2007, no. 5; C. Johnson, T. Boersma, *Energy (in)security in Poland the case of shale gas*, *Energy Policy*, 2013, no. 53, pp. 389–399; T. Olkusi, A. Szurlej, P. Janusz, *Realizacja polityki energetycznej w obszarze gazu ziemnego*, *Polityka Energetyczna—Energy Policy Journal*, 2015, Tom 18, Zeszyt 2; P. Frączek, M. Kaliski, P. Siemek, *The modernization of the energy sector in Poland vs. Poland's energy security*, "Archives of Mining Sciences", 2013, vol. 58, issue 2, pp. 301–316.

² The first of Ignalina's reactors was closed in 2005.

³ In 2009 average EU Energy dependency was at 54%.

⁴ V. Gaigalis, R. Skema, *A review on solid biofuel usage in Lithuania after the decommission of Ignalina NPP and compliance with the EU policy*, *Renewable and Sustainable Energy Reviews*, 2016, vol. 54.

Table 1. Lithuania's dependency on energy imports [%]

	1995	2000	2005	2010	2012	2013
Import Dependency	63.1	59.4	56.8	81.8	80.3	78.3
on Solid Fuels	64.4	87.0	94.6	92.0	89.3	99.6
on Petroleum Fuels	114.5	100.4	91.9	98.7	92.9	93.2
on Natural Gas	100.0	100.0	100.7	99.7	100.1	100.0

Source: EU, *EU energy and transport in figures. Statistical pocketbook*, Directorate-General for Energy and Transport, 2015, p. 205.

In order to reduce Lithuania's dependence on supplies of energy resources, efforts have been made to rapidly increase the share of renewable energy sources (especially biomass) in the Lithuanian energy balance⁵. Consequently, RES share as electricity source was in 2013 second only to natural gas. The participation of RES in the energy balance grew especially quickly in the years 2005–2010 (from 10.3% to 16.2%), which, following the closure of the Ignalina power plant, helped improve the country's energy security. The dynamic pace of RES growth in the energy balance of the country will help meet the objective of integrating such sources in the final energy by 2020, which is in line with the requirements of the energy and climate package. It is highly likely that Lithuania's assumed goal of reaching a 23% share of RES in its final energy production by 2020 will be achieved, however, it will involve a significant investment effort. The positive effect of increased importance of renewable energy on energy security of the country will constitute a large part of the efforts.

The dominant form of renewable energy used in Lithuania is biomass, which results from favorable natural conditions for widespread use of such sources. This high position of biomass is also due to financial support given to promote such environmentally friendly technologies as installations for biomass combustion. Thanks to the above conditions, biomass is considered the most promising renewable energy source in the country. The widespread use of biomass is facilitated by the development of district heating networks and one can observe the phenomenon of replacing conventionally powered plants (mainly by natural gas) by biomass plants.

Another important local source of energy after biomass is hydropower. Hydroelectric installations, due to their low power, however, have little impact on the energy security of the country. Windpower is also insignificant in the energy balance of Lithuania.

Increasing the role of natural gas

To improve energy security, the Lithuanian government has taken steps to diversify the structure of primary energy sources. This results mainly from the desire to diversify the sources of natural gas supply and the development of gas infrastructure. Such moves serve to find other possibilities of natural gas supplies from outside Russia, which is expected to contribute to increasing the security of supply of this fuel and to guarantee its best prices.

What particularly increased the security of gas supply was the opening of Lithuania's first LNG terminal in December 2014, which enabled the Baltic countries to import natural gas from suppliers

⁵ National Energy Independence Strategy of the Republic of Lithuania. Resolution no. XI–2133 of the Seimas of the Republic of Lithuania of 26 June 2012, available at: http://www.enmin.lt/lt/activity/veiklos_kryptys/strateginis_planavimas_ir_ES/Energy_independence_strategy0919.pdf.

other than Russia. Before the LNG terminal, Lithuania was totally dependent on natural gas supplies from Russia, which forced the country to pay one of the highest prices of natural gas in Europe. Thanks to the terminal, Lithuanian gas customers gained access to the global market of this fuel. This means supplies of gas come from different directions, and what followed was a significant reduction in the risk of interruptions in the supply of natural gas, which in turn translated into lower gas prices for consumers. The Lithuanian gas terminal could become an important source of natural gas to other Baltic countries.

In order to expedite the investment process, the LNG terminal was not built in the form of installations on land. Instead, a floating LNG terminal, "Independent", able to receive gas in liquid form, was leased from the Norwegian Hoegh company, which was a move greatly improving the security of gas supply. The ship was anchored to appropriately fitted infrastructure (jetty) in Klaipeda quay.

The lease of the LNG ship, which could quickly increase the security of gas supply to Lithuania and other Baltic States is the result of efforts undertaken by the Lithuanian government. Thanks to the commitment of government institutions and selection of a reliable supplier of natural gas terminal, in a relatively short period of time the situation of the Baltics radically improved in terms of dependence on energy supplies from Russia.

One disadvantage of the adopted solution is the high cost of the installation's operation, which dictates higher gas prices in the Baltic states. The cost of a ten-year lease of the Lithuanian floating LNG terminal is approx. 2.2 billion zlotys⁶, which, given the limited capacity of the terminal and low demand for natural gas in Lithuania will increase the price of natural gas to Lithuanian customers.

A significant threat to the functioning of the Lithuanian LNG terminal lies in the drop in demand for natural gas in the country. This results from:

- limiting the consumption of natural gas following an economic downturn of many Lithuanian enterprises,
- increasing the importance of biomass, which replaced to some extent the position of natural gas in the Lithuanian energy balance – this is related to the shift towards renewable energy sources and the requirements of the energy and climate package.

One of the conditions of leasing the Lithuanian LNG terminal was an obligation to purchase the contracted supply of natural gas in the liquid form (min. 540 million m³ of gas per year). This condition imposed on the Lithuanian energy and heat producers the obligation to purchase 25% of the consumed natural gas in Lithuania through the gas terminal in Klaipeda⁷. This solution guarantees sales of gas from the Lithuanian LNG terminal regardless of the relative prices compared to the prices of natural gas offered by Gazprom.

By leasing "Independent" Lithuania improved its negotiating position in relation to Russia's Gazprom and thus enjoyed a significant decrease in natural gas prices. In January 2015, after the gas terminal in Klaipeda opened, prices fell by 40% for industries and by 20% for other recipients⁸. One barrier, however, to the reduction of natural gas price for Lithuanian consumers is the high cost of the terminal operation, which makes gas a much less competitive fuel. Still, a further decline in natural gas prices for consumers in the Baltic states is expected in the subsequent years. This would be the result of natural gas sales by US companies which source it from shale deposits⁹.

The target capacity of the Lithuanian LNG terminal (approx. 4 billion m³ of regasified natural gas per year) exceeds Lithuania's annual demand for this fuel (approx. 2 billion m³). At the same time co-

⁶ The value of investment related to the construction in Poland of the gas terminal in Swinoujscie is approx. 2.4 billion zł. Its advantage is the planned long period of operation (approx. 50 years) and high capacity (5 billion m³ per year with the possibility of increase after its expansion).

⁷ J. Hyndle-Hussein, *Litewski terminal LNG – Independence?*, available at: www.osw.waw.pl. [05.11.2014].

⁸ Trusewicz I, 2015, *Litwa: terminal obniża cenę gazu*, Rzeczpospolita, available at: www.rzeczpospolita.pl, [30.04.2015].

⁹ The first delivery of natural gas from the United States to Lithuania is expected to take place in 2006. See: *Nowe realia rynku gazu ziemnego związane z terminalem LNG – przykład Litwy*, Polskie LNG, February 2015.

operation between Lithuania and other Baltic states in this regard is very slow, which makes it hard to transfer part of the costs of the Lithuanian LNG terminal to neighboring countries. In order to develop the natural gas market in the Baltics, actions have been taken to take advantage of the Lithuanian gas infrastructure through its further extension and creating a joined pipeline system with Latvia and Estonia. Work is also underway to connect the gas systems of the Baltic states with Finland, which will further increase the security of gas supply to these countries.

The energy security of the Baltic countries will be further increased by implementing plans for the construction of a grid linking the gas pipeline systems of Poland, Lithuania, Latvia and Estonia¹⁰. The construction of such a pipeline, which will integrate the gas pipeline systems in these countries, will increase the reliability of supply of this fuel and will further decrease their dependence on supplies from Russia. There are also plans for the construction of a gas terminal in Estonia, which may help to diversify sources of natural gas supplies to the Baltic countries

Future energy policy in Lithuania

An important aspect of change in the Lithuanian energy policy is the reduction of the economy's energy intensity¹¹. Therefore it was crucial to increase the energy efficiency by promoting cogeneration, which is a very important source of heat and electricity, by carrying out numerous thermo-modernization investments and through optimizing production processes. Thanks to such consistent activity in this area it was possible to significantly reduce energy intensity of the Lithuanian economy (Table 2).

Table 2. Selected data on energy intensity of Lithuania's economy in 2005–2013

	1995	2000	2005	2010	2012	2013
Energy intensity (toe/M€'10)	597	389	330	242	230	210
Energy per Capita (kgoe/cap)	2380	2018	2622	2191	2375	2261
Final electricity per Capita (kWh/cap)	1751	1771	2401	2690	2986	3028
Primary energy intensity (toe/M€'10)	560	352	299	217	190	178

Source: EU, *EU energy ...*, op. cit., p. 205.

These changes led to a significant reduction in energy demand, and consequently contributed to enhancing the energy security of the country. It should be added that Lithuania's decrease in energy intensity is accompanied by an increase in electricity consumption per capita, which results from the growing affluence of society. By improving the economy, the pace of limiting growth in energy intensity of the economy is lower than the growth rate of electricity consumption.

Another important aspect of changes instituted by the Baltic countries may come from the construction of a new Lithuanian nuclear power plant, which would be a source of energy for consumers in these

¹⁰ Magor R., *Rynek energii elektrycznej Litwy a bezpieczeństwo energetyczne*, Teka Kom. Politol. Stos. Międzynar.–OL PAN, 2014, 9, pp. 63–74.

¹¹ See V. Klevas, R. Minkstimas, *The guidelines for state policy of energy efficiency in Lithuania*, Energy Policy, 2004, vol. 32, Issue 3, pp. 309–320 and V. Kveselis, E.F. Dzenajavičienė, S. Masaitis, *The role of district heating and cooling technologies in energy provisions for building sector: Challenges and perspectives*, 8th International Conference on Environmental Engineering, ICEE 2011, Vilnius; Lithuania 2011, pp. 762–768.

countries. However, construction of such power plants meets with public opposition, which was confirmed by the results of a referendum in the autumn of 2012 on the construction of this type of source of energy.

The referendum result does not exclude the possible construction because it is not binding for the Lithuanian government. After the referendum, the Lithuanian government declared that the project would not be carried out contrary to the expectations of society. However, the rationality of this project is still being considered and subject to analysis. In 2014 the Lithuanian government signed a memorandum with Hitachi company, which essentially boils down to continued work towards the construction of this power plant. Whether or not it will be carried out, depends largely on the decision taken by the Lithuanian government as well as how competitive the price of this energy source will be.

Lithuania appears to observe a gradual decline in bad gas emissions, which is the result of a consistently implemented policy aiming to increase the importance of renewable energy sources and to reduce energy intensity of its economy. It should be emphasized that the observed decrease in greenhouse gas emissions was achieved despite the above mentioned growth in electricity consumption. Subsequent years should bring a further significant reduction in gas emissions being the effect of continued efforts to further increase the importance of renewable energy sources and improve overall energy efficiency.

Conclusion

The basis for the modernization changes in the energy policy of Lithuania is its tendency to increase energy security, perceived as one of the country's energy policy priorities. The importance of this issue further coincided with the closure of the Lithuanian Ignalina nuclear power plant, which was the main source of energy in the country. Due to the lack of energy imports to Lithuania from countries other than Russia, the closure of the Ignalina power plant significantly compromised Lithuania's energy security. In order to improve energy security in Lithuania the following activity has been undertaken:

- dissemination of renewable energy sources (mainly biomass), which significantly lowers dependence on energy imports,
- diversifying the supply sources of natural gas, which results from the construction of the LNG terminal,
- limiting energy intensity of the Lithuanian economy in connection with consistent modernization in the sector.

Of great importance in the change of the country's energy policy is also the question of EU energy market development and support from the European Commission for projects aimed at the diversification of energy supply sources.

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PART II

**EFFECTIVENESS, BUSINESS
VALUATION AND FINANCING
OF ENTERPRISES**

Jarosław Kaczmarek
Cracow University of Economics, Poland

DEVELOPMENT, EFFECTIVENESS AND VALUE OF ENTERPRISE – UNITY OR PROXIMITY OF PURPOSES, ACTIVITIES AND MEASURES OF ASSESSMENT*

Summary

As universal for entrepreneurs functioning in the economy market, three features can be accepted and simultaneously the purposes of activities: effectiveness – development – value. Economic effectiveness can be considered as the most fully expressing the rationality of managing, and prosperity is effective manner of reaching it. All of these categories are aimed at achieving the objectives of the enterprise, with the overriding objective – its development.

Effectiveness of the company determines its development – it is its imperative. Keeping the company on the path of stable growth requires a constant assessment of the effects achieved. In this context, in an article the critical discussion was the recognition of the creation of the company's value as a universal and comprehensive measure of the efficiency in the company. However, this is one of the measures, because efficiency is a quantitative characterization of the properties of enterprise development. This is due to the evaluative nature of this category in assessing the dynamics of development, conditions, factors and processes that shape it. Development as a category of quality, however, does not give up easily quantify.

* * *

Introduction

The essence of enterprise is described by the features and rules directing its operation. They include: directing and ability to gain profits, functioning in conditions of risk, prosperity and its basis on the form of innovativeness, connections with the surroundings, the principle of economy, financial balance and autonomy².

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² A. Kozakiewicz, *Współczesne trendy w innowacyjności – w kierunku otwartych innowacji*, „Przegląd Organizacji” 2001, No 5, p. 20; *Innowacje w strategii rozwoju organizacji w Unii Europejskiej*, scientific editor: W. Janasz, Difin, Warszawa

Functioning of the enterprises depends on the influences of multiple processes and their consequences, having the economical and non-economical character. The last ones are focused on the policy of country which functioning should favor increasing the micro economical effectiveness and fast, economically, socially and ecologically balanced increase in long term³. Economic situation is the factor, which always influences on the situation of every enterprise – by the balanced scale, degree and scope of effect. Globalization and integration as the expression of internationalization determine new stages in the development of enterprises: from national, through international, multinational, until the global enterprise⁴. Entering into the third phase of changes as the informative society brings constant and quickly spreading access to the information and allows the transfer of data, while the knowledge and the information are becoming the evaluative factors in achieving the success and the crucial strategy resources⁵. In this context, the co-existing dynamic development of capital markets redefined the function of enterprises – from the manufacturing form on the investing form i.e. accumulating invested capital⁶.

Purposes of enterprise

The term of purposefulness in running the enterprise creates the multiple disputes on the ground of theory of economy as well as the theory of enterprise⁷. The purpose apart from the institutional dimension, is also the normative model of behavior and states which should be achieved by the enterprise by its activities. These expected states are economical variables being the object of interests among the interest groups and simultaneously the criterion of taking the decision and the way of procedure. Formulating of the enterprise aims does not always lead to create the coherent collection creating the beam of purposes⁸. Moreover, they have been changing in time and besides, the concept of beam of purposes can meet the criticism in reference to accepting the assumption about lack of contradictions among the purposes of organization and accepting the coalition of enterprise as one entrepreneur⁹.

Describing the current economy, such attributes can be indicates such as the turbulency of surrounding, rate and radicalness of changes, internationalization (globalization and regionalization), unprecedented scale of people, capital, products, technology, knowledge and information flows. They become the factors influencing the operating aims of enterprise. Beside the indicated differences in their defining, survival and development should be considered as the most general. First of them is the necessary condition for the realization of other aims but survival itself in the conditions of society changing in the intensive way means slow collapsing of the enterprise¹⁰. Therefore in the long term, realizing the purpose of survival, the enterprise must be directed also for the development.

2009, p. 94; Z. Sapijaszka, *Restrukturyzacja przedsiębiorstwa. Szanse i ograniczenia*, Wydawnictwo Naukowe PWN, Warszawa 1997, p. 14; Z. Pierścioneł, *Strategie rozwoju firmy*, Wydawnictwo Naukowe PWN, Warszawa 1996, p. 130; I. Penc-Pietrzak, *Analiza strategiczna w zarządzaniu firmą. Koncepcja i stosowanie*, C.H. Beck, Warszawa 2003, p. 14.

³ Z. Sadowski, *Polska wobec wyzwań XXI wieku. In: / Gospodarka Polski na przełomie wieków*, scientific editor: Z. Dach, PTE, Kraków 2002, pp. 51 and 77.

⁴ R.W. Griffin, *Podstawy zarządzania organizacjami*, Wydawnictwo Naukowe PWN, Warszawa 2000, pp. 168–169; B. Pławgo, *Zachowania małych i średnich przedsiębiorstw w procesie internacjonalizacji*, Instytut Organizacji i Zarządzania w Przemysle „ORGMASZ”, Warszawa 2004, p. 47.

⁵ J. Macias, *Nowa rola informacji w społeczeństwie informacyjnym*, „Przegląd Organizacji” 1998, No 10, p. 15.

⁶ R. Borowiecki, A. Jaki, J. Kaczmarek, *Metody i procedury wyceny przedsiębiorstw i ich majątku*, Wydawnictwo PSB, Kraków 1998, p. 18.

⁷ T. Gruszecki, *Współczesne teorie przedsiębiorstwa*, Wydawnictwo Naukowe PWN, Warszawa 2002, pp. 155–250.

⁸ M. Gorynia, *Zachowania przedsiębiorstw w okresie transformacji*, Akademia Ekonomiczna w Poznaniu, Poznań 1998, p. 33; R.M. Cyert, J.G. March, *A Behavioral Theory of the Firm*, Blackwell Business, Cambridge 1992, p. 98.

⁹ *Zarządzanie. Teoria i praktyka*, scientific editors: A.K. Koźmiński, W. Piotrowski, Wydawnictwo Naukowe PWN, Warszawa 2001, p. 719.

¹⁰ M. Marcinkowska, *Kształtowanie wartości firmy*, Wydawnictwo Naukowe PWN, Warszawa 2000, p. 18.

Currently, as the pragmatic, quantifiable, financial purpose of enterprise is indicated the maximization of its value – the value of equity capital accumulated in it. The purpose is output on the grounds of managing the finances of enterprise, capital and financial benefits belonging to the owners of enterprise¹¹. The value referring to the benefits of owners is defined as the creative value¹².

Increase and development of enterprise

In scope of various, detailed defining of development, the terms used indicate its identifying with the change of current state of things¹³. According to O. Lange, the development is the dialectic process and changes which underlie, do not proceed by leaps and bounds but arrange in certain sequences and strings – constituting the process in which the individual parts join together in the more complicated systems, which have new attributes and regularities so far being unheard¹⁴. In systematic terms, the development of enterprise is connected with the increase of its complexity¹⁵.

The development of enterprise as the coordinated changes of its subsystems, adjust each other to constantly changing surrounding¹⁶. These changes can be quantitative or qualitative. The first ones refer to the differences in the size of one or a few parameters, and the second ones indicate the attributes, reactions or behaviors of enterprise¹⁷. Given the fact that these changes are ordered, relatively constant and follow each other, the development is the process proceeding in time. It consists of logically ordered phases and stages which are overcome by normally developing enterprises¹⁸. As long as the enterprises undergo these changes in the matter of time, it is possible to talk here about the cycle of enterprise life.

The complex and multidimensional character of development causes that it is difficult to construct the measurement which would include all developmental processes of enterprise. That is why, some authors lean towards presenting the hypothesis that from the nature of development seems to be the category non-quantified – it is possible to value only the phases of development – progress, regress and stagnation¹⁹.

Unlike the development as the process of quantitative changes, increase is bounded with the qualitative changes. The increase follows mostly the changes realized in the existing hierarchy of enterprise purposes, in turns, the development shapes the new hierarchy. Differentiating of these categories is the scope and character of changes – the increase is the continuation of current directions and structure of enterprise activities, while the development means the changes going beyond the existing standards²⁰. The quantitative changes are connected with the usage of intensive production factors, therefore together with their carriers, they can be defined as the ability to develop – potential of development. It is such manufacturing potential (ensemble of material resources and intellectual or abilities), which guarantees

¹¹ A. Rappaport, *Creating Shareholder Value. The New Standard for Business Performance*, The Free Press, New York 1986, p. 77; G.B. Stewart, *EVA: Fact or Fantasy*, „Journal of Applied Corporate Finance” 1994, No 2, pp. 72–73.

¹² A. Cwynar, W. Cwynar, *EVA, amortyzacja ekonomiczna i kreacja wartości dla akcjonariuszy*, „Przegląd Organizacji” 2007, No 5, p. 35.

¹³ K. Fabiańska, J. Rokita, *Planowanie rozwoju przedsiębiorstwa*, PWE, Warszawa 1986, p. 14.

¹⁴ O. Lange, *Całość i rozwój w świetle cybernetyki*, PWN, Warszawa 1968, p. 9.

¹⁵ A. Bojarska, W. Bojarski, *Ocena ekonomiczna programu rozbudowy systemu*, „Prakseologia” 1972, No 41, p. 12.

¹⁶ Z. Pierścioneck, *Strategie rozwoju firmy ...*, op. cit., pp. 11–12

¹⁷ A. Stabryła, *Zarządzanie rozwojem firmy*, Akademia Ekonomiczna w Krakowie, Kraków 1996, p. 9.

¹⁸ A. Lozano Platonoff, S. Sysko–Romańczuk, *Dynamiczne modelowanie funkcjonowania przedsiębiorstwa*, „Organizacja i Kierowanie” 2003, No 2, p. 24.

¹⁹ K. Fabiańska, J. Rokita, *Planowanie rozwoju ...*, op. cit., pp. 11–12.

²⁰ S. Młynarski, J. Kaczmarek, *Zmiany strukturalne w gospodarce polskiej w okresie transformacji. /In:/ Restrukturyzacja w okresie transformacji gospodarczej. Instrumenty, przebieg, efekty*, scientific editors: R. Borowiecki, A. Jaki, Akademia Ekonomiczna w Krakowie – Towarzystwo Naukowe Organizacji i Kierownictwa, Warszawa–Kraków 2005, pp. 153–165.

the performance of projects in the character of qualitative changes (also quantitative) for the enterprise as well as the promptness to identify and undertake such projects²¹.

It should be agreed with the concept that identification of development with the quantitative changes with the qualitative changes, and increase – with quantitative ones, constitutes significant simplification. The quantitative changes does not appear in separation from qualitative, therefore the increase can often lead to the development. In other words, the increase creates better conditions to adjust the enterprise to surroundings i.e. its development – or formulating stronger – increase is the integral part of enterprise²². Assigning the qualitative character to the development, and the quantitative to the increase, is in proper for the traditional attitude. Moreover, at the beginning, the development was associated with the size of enterprise, size of production or the factors of production. Only at the further stage the development was started to be seen as the qualitative changes, expressed by the changes of enterprise structures and its effectiveness²³.

Ways and strategies of development

The development is the multidimensional and complex process. The development of enterprise (both static and dynamic) is shaped by the conditions of development, subset of factors and the processes expressing the operating of economical rights, as well as being their effects of economical benefits²⁴. These processes influence on the development and effectiveness of enterprise being the manifestation of functioning the universal regularities and the economical rights. The process agreeable with those regularities and the rights brings the determined benefits for the enterprise in the form of improvement of effectiveness in using the sources and streams of production factors. From the perspective of science about management, the development is the process which appears only when the increase of enterprise is justified by efficiency of management processes. This efficiency is the feature of processes which coordinate operating of enterprise.²⁵ The fundamental orientations of the developmental process are: focus on goals and focus on processes. It allows distinguishing the directions of development.

The basic ways of enterprise development achieved by the quantifying increase are endogenous and exogenous development²⁶. Due to the complexity of development process, its ways are usually different from the straightforward trend. The bigger variation is, the longer is the development way for the enterprise and otherwise – lower variation means fastening of development. The ways of development for enterprise are:²⁷

- development through integration (the external way by co-operative relationships and joining the enterprises),

²¹ *Rozwój przedsiębiorstw. Modele, czynniki, strategie*, scientific editor: M. Białasiewicz, Uniwersytet Szczeciński, Szczecin 2002, pp. 24–25.

²² *Zarządzanie przedsiębiorstwem*, scientific editor: M. Strużycki, Difin, Warszawa 2002, p. 220.

²³ J. Kaczmarek, *Intensywność przemian strukturalnych mezostruktury gospodarki Polski*, „Przegląd Organizacji” 2013, No 7, pp. 27–33.

²⁴ S. Chomątowski, *Dynamika rozwoju a efektywność systemów przemysłowych*, Working Papers No 115, Akademia Ekonomiczna w Krakowie, Kraków 1993, pp. 37 i 46.

²⁵ S. Sysko–Romańczuk, *Rozwój przedsiębiorstwa jako rezultat jego wzrostu i sprawności procesów zarządzania*, Uniwersytet Szczeciński, Szczecin 2005, pp. 10–11.

²⁶ T. Gołębiowski, *Zarządzanie strategiczne, planowanie i kontrola*, Difin, Warszawa 2001, p. 22; B. Nita, *Metody wyceny i kształtowania wartości przedsiębiorstwa*, PWE, Warszawa 2007, pp. 192–193.

²⁷ W. Gabruszewicz, *Restrukturyzacja jako podstawa rozwoju przedsiębiorstwa. /In:/ Restrukturyzacja w procesie przekształceń i rozwoju przedsiębiorstw*, scientific editor: R. Borowiecki, Akademia Ekonomiczna w Krakowie – TNOiK Oddział w Krakowie, Kraków 1996, p. 385.

- development by natural increase of enterprise (the internal way, individual, with the usage of specializations and diversification),
- development through restructuring (gradual leading towards the agreement between the enterprise and the surroundings).

The conditions and factors of development indicate the relations which can appear between the potential of activity and the potential of influence in enterprise. They describe the kinds of developmental projects which can be: restructuring, revitalization, increase or expansion, revival or decline²⁸.

The development can be realized by different ways – by means of various strategies. In many opinions, the strategy is used to reduce hazard²⁹ and using the developmental chances appearing in surroundings, therefore it cannot be associated with development³⁰. The development is not the automatic phenomenon and depends on the conditions of environment and possibilities of enterprise. Currently, the enterprises do not accept the development which they can react on. It can be planned and controlled, what creates the premises to manage the development. It caused the appearance of current focused on increase, giving the opportunities of modeling.

Measures to assess the enterprise development

The measures are the economical categories reflecting the events or facts of managing, appearing in the enterprise and surroundings, expressed by accurate units of measure. The basic function of measures is the exact measure of economical values as well as playing the role of criterion in the decisive process in the enterprise.

The basis of development is created by the changes of enterprise size and structure and its material and non-material components, conditions and factors as well as the economical processes shaping these changes. The complex and integral character of quantitative and qualitative changes reflects the connections and dependencies of all components, processes and factors existing inside the enterprise and the existing conditions in its environment. The complexity and multidimensionality of enterprise development category causes then the necessity of covering with the assessment the wide specter of terms³¹. The collection of assessment measures used aiming this is broad and the most useful are:

- quantitative and qualitative measures,
- point and scope measures,
- measures presenting the inner relationships and relations between company and surrounding,
- measures placed on the time line and measures presenting the enterprise against the society,
- measures of state and level of enterprise development and its developmental ability

Connecting the groups of measures, the spatial dimension and time dimension became the basis of construction determined as the system of enterprise development assessment. It includes the component

²⁸ J. Machaczka, *Zarządzanie rozwojem organizacji. Czynniki, modele, strategia, diagnoza*, Wydawnictwo Naukowe PWN, Warszawa–Kraków 1998, pp. 16–17.

²⁹ K. Fijorek, J. Kaczmarek, K. Kolegowicz, P. Krzemiński, *Ocena zagrożenia przedsiębiorstw upadłością – koncepcja systemowa ISR*, „Przegląd Organizacji” 2015, No 4, pp. 18–25.

³⁰ *Strategia rozwoju przedsiębiorstwa*, scientific editor: S. Kielczewski, Akademia Ekonomiczna we Wrocławiu, Wrocław 1992, p. 90; W. Janasz, *Strategie rozwoju przedsiębiorstwa. /In:/ Zarządzanie strategiczne. Koncepcje, metody, strategie*, scientific editor: K. Janasz, W. Janasz, K. Kozioł, K. Szopik, Difin, Warszawa 2008, p. 111; M. Romanowska, *Planowanie strategiczne w przedsiębiorstwie*, PWE, Warszawa 2004, pp. 64–65.

³¹ J. Kaczmarek, *Mezostuktura gospodarki Polski w okresie transformacji – uwarunkowania, procesy, efektywność*, Difin, Warszawa 2012, pp. 58–75.

of assessment of external conditions, component of usage assessment of usage and the component assessing the abilities of assessment. Two types of measure were included: time and space³².

Due to the high dependence of the accuracy of the measurement and evaluation of business development of companies on the proper selection criteria of the assessment of its development, they should be subjected to a thorough analysis from the point of view of their usefulness (purposefulness), correctness of terminology and compliance with the methodology³³. Measures of effects of economic, financial results and performance of companies measures can be considered as subsets of indicators to assess the development of the company. The measures of economical effects of development in enterprises are highlighted there. Not all random measures of business entity's assessment can be applied to measure the enterprise development³⁴.

Value and effectiveness – the purposes of operating and the measures of enterprise development

The development associates with the qualitative changes is accompanied by the increase of quantity of sources and streams of manufacturing factors obtained by the enterprise. As the processes, the effective qualitative changes should cause though the increase of value of enterprise, its creating³⁵. Currently, the enterprise is considered as the special kind of economic goods whose value is determined, analyzed and constitutes the object of management. Classic economy defined the sources, factors and kinds values³⁶. Understanding of their essence refers to the category of expenditures, effects connected with them as well as benefits, which indicates leaving the term of enterprise's capital in the real understanding towards the capital in the abstract understanding, connecting the value of enterprise with its ability to multiply the invested capital³⁷.

As it is proved, the value of enterprise and the development are the aims being tapered and complementary towards each other. The bilateral relationship occurs between them (interdependence), because the value influences on its development and the development has the impact on the value of enterprise. The dynamic assessment of the impact indicates that it can occur in different directions and with varying intensity. In order to maintain the integrity of an inference, the views should also be cited, where the value of the company is recognized as a result of development. Therefore the development is treated as the element of creating the value of the enterprise (benefits its owners). Such attitudes results in the acceptance of thesis that the necessary condition of enterprise increase is its permanent development guaranteeing survival. Such opinion is not convincing though.

The assessment of development of its quantification is required. The development as the qualitative category does not give up easy. Therefore, there is reference to the qualitative category – i.e. increase. It is used to assess the increase, and for its conducting, finding the universal measurement is necessary. In

³² W. Gabrusewicz, *Rozwój przedsiębiorstw przemysłowych i jego ocena w gospodarce rynkowej*, Working Papers No 120, Akademia Ekonomiczna w Poznaniu, Poznań 1992, pp. 76–78.

³³ *Analiza porównawcza efektywności przedsiębiorstw w Polsce po 1990 r. według ich wielkości, rodzaju działalności, form własności oraz form organizacyjno-prawnych*, scientific editor: S. Chomątkowski, Akademia Ekonomiczna w Krakowie, Kraków 2003, pp. 25–32.

³⁴ Z. Leśkiewicz, *Paradygmat racjonalności w gospodarowaniu*, Uniwersytet Szczeciński, Szczecin 1990, p. 97.

³⁵ Z. Pierścionek, *Strategie rozwoju firmy ...*, op. cit., p. 17.

³⁶ D. Ricardo, *Zasady ekonomii politycznej i opodatkowania*, PWN, Warszawa 1957, p. 7 ff; A. Smith, *Bogactwo narodów. Tom 1*, PWN, Warszawa 1954, p. 37 ff; M. E. Taylor, *Historia rozwoju ekonomiki. Tom 1*, Delfin, Lublin 1991, pp. 74–75.

³⁷ J. Kaczmarek, *The Quantification of Effectiveness in the Context of Shareholder Value and its Creation. /In:/ Enterprise in Hardship Economics, Managerial and Juridical Perspectives*, scientific editors: A. D'Amico, G. Moschella, ARACNE editrice, Roma 2014, pp. 293–308.

the light of until–now considerations, the value of enterprise can be found as it. It is the synthetic measure allowing the quantification of benefits belonging to the owners of enterprise, who fulfill the function of entrepreneurs. Maximizing the benefits for owners, the profits for all stakeholders of enterprise are also increased maximally³⁸. Everything that the enterprise achieved in the past and/or everything that can be future benefit finds reflection in its value – the suitable kind of category. In case of enterprise, it is needed to distinguish the technical and organizational attitude (the enterprise is not the simple sum of source's values) and understanding it as the economy and financial unit (being the place of investing the capital).

The effectiveness of enterprise functioning is conditioned by its development – it is its imperative. Maintaining the enterprise on the way of stable increase requires the constant verification of achieved effects. Their assessment is led with regard to their sources and streams of manufacturing factors engaged in order to achieve effects and expressed by measures of effectiveness. The effectiveness and development, though, result directly from the sources obtained by the enterprise³⁹, and moreover – from their skillful usage, from changing the conditions into factors, by use of regularities and rights occurring in the processes of managing in the enterprise.

The term of effectiveness in managing is often connected, often to the contrary, with the term of rationality. Besides, the analyzes of those two categories forces out the necessity of acceptance of one more – prosperity. Formulating the generalized conclusion, the economic effectiveness can be considered as the most fully expressing the rationality of managing and prosperity is the efficient way of achieving the effectiveness⁴⁰. All of those categories are directed towards achieving the aims of enterprise functioning with its dominant purpose – its development.

In understanding above, creating the value of enterprise can be considered as the universal and versatile measurement of effectiveness of operating the enterprise. It is, though, one of measures because the effectiveness should be seen in the broader context. The effectiveness constitutes the quantifying characteristic of enterprise development features. It results from the valuating character of its category in the assessment of assessment of dynamism, conditions, factors and processes which shape it. The effectiveness is the complex and multidimensional category and its measure requires various and dissimilar measures of effectiveness. The feature of valuating effectiveness is defined by multiple relations of effects achieved by the enterprise and many expenditures incurred in order to achieve them. The relations are conducted the quantifying with the use of measures adjusted in the way being suitable for the aim of conducted research of effectiveness⁴¹.

Conclusion

In the light of undertaken issues in this article, three features can be found as universal for the enterprises functioning in the economy market and simultaneously the aims of operating: effectiveness – development – value. They are determined by the market and the attributes of economy market: ownership, economic freedom and competitiveness. The other feature which is nowadays marked is innovativeness.

³⁸ A. Rappaport, *Wartość dla akcjonariuszy. Poradnik menedżera i inwestora*, WIG–Press, Warszawa 2000, pp. 60–66.

³⁹ R. Polaczek, *Kreowanie wartości przedsiębiorstwa poprzez zarządzanie majątkiem*. /In:/ *Procesy restrukturyzacji a konkurencyjność w warunkach globalizacji*, scientific editor: R. Borowiecki, A. Jaki, Akademia Ekonomiczna w Krakowie – Fundacja Akademii Ekonomicznej w Krakowie, Kraków 2006, p. 235.

⁴⁰ S. Młynarski, J. Kaczmarek, *Asset Productivity and Recovery in the Context of Corporate Restructuring (A Mezo-economic Approach)*. /In:/ *Contemporary Economies in The Face of New Challenges. Economic, Social and Legal Aspects*, scientific editors: R. Borowiecki, A. Jaki, T. Rojek, Cracow University of Economics – Foundation of Cracow University of Economics, Cracow 2013, pp. 417–431.

⁴¹ S. Chomątkowski, *Dynamika rozwoju a efektywność ...*, op., cit., pp. 83–88.

The basic determinant of enterprise activity is its connections with the surroundings (more and more complicated and varied), and in lower extent the inner processes. Reacting on the changes in the surroundings, by the form of adapting and anticipation is not the accidental activity but the element of shaping process of enterprise and the guarantor of effectiveness increase.

The development became for the nowadays enterprise the idea indicates new directions of operation. It is the necessary condition to stable functioning of enterprise – the categorical imperative of its effectiveness. Guaranteeing the way of stable development for the enterprise requires constant verification of the effects achieved by activity, changes in the surroundings and their influence on the enterprise. Both categories – the effectiveness and the development of enterprise – result directly from the obtained and used sources.

The effects of enterprise development adopt varied character, materializing in realization of expectations of particular interests groups – stakeholders of enterprise. Among them, the owners and their financial aim in the character of multiplying (maximization) of enterprise values – value of the owner's capital (equity capital) engaged in assets, in order to achieve the benefits of it resulting from the increase of competitive edge on the market – take the crucial place. From this perspective, it is possible to accept creating of enterprise value as currently the most universal and versatile measure of effectiveness its operations, describing the degree of financial aim realization by the owners of enterprise. It includes the number of partial measures being simultaneously the financial detailed purposes of the enterprise. It simultaneously confirms the statement that creating the value in the context of financial function of enterprise's purpose is the strategic aim verifying the effectiveness of decisive process and taken in the scope of activities. Currently, such attitude shaped the stream of management directed towards creating the value (VBM).

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Katarzyna Byrka-Kita
University of Szczecin, Poland

PRIVATE BENEFITS OF CONTROL IN BUSINESS VALUATION AS A SOURCE OF DISPUTES BETWEEN SHAREHOLDERS

Summary

In case of litigations between shareholders or at evaluating a fair market value for the purposes of inheritance proceedings, it is necessary to adjust the valuation base value for a premium and discount on the score of financial and strategic control, whose source are private benefits of control. The purpose of this paper is to review the definitions of the control premium and present the sources of private benefits of control in the context of the business valuation processes.

* * *

Introduction

Benefits of control have been a subject of interest of finance and management theory for many years. They are analysed by researchers dealing with evaluation and company finance problems as well as those involved in corporate governance issues. Works such as “An Inquiry into the Nature and Causes of the Wealth of Nations” by Adam Smith, “The Modern Corporation and Private Property” by Adolf Berle and Gardner Means, and “The Limits of Organization” by Kenneth Arrow have emphasised threats resulting from atomised shareholders and a conflict of interests between an agent and a superior. Significant share packages constitute, on one hand, a tool allowing the protection of shareholders’ interests. On the other hand, analyses carried out by researchers such as La Porta, Lopez-de-Silanes and Shleifer¹ as well as Dyck and Zingales² prove that in countries characterised by a poor system of minority shareholders’ protection, the shareholders are much more concentrated. Even in the largest in terms of assets and capitalization companies, there is a shareholder disposing of a control package of shares; it sometimes

¹ R. La Porta, F. Lopez de Silanes, A. Shleifer, *Corporate ownership around the world*, „Journal of Finance”, 1999, Vol. 54, No. 2, pp. 471–517.

² A. Dyck, L. Zingales, *Private benefits of control: An international comparison*, „The Journal of Finance”, 2004a, Vol. 59, No. 2, pp. 537–600.

happens that the state is that shareholder, but much more frequently, it is a family member, most likely the company's founder or his inheritors.

One of the basic assumptions of a modern theory of finance concerns ownership atomisation in public companies and the fact that all owners receive the same remuneration, in proportion to the share in the ownership structure. The next fundamental assumption refers to diversification. The Capital Asset Pricing Model, among others, has been based on a premise that investors diversify their assets in order to eliminate a specific risk. In consequence, a question arises of why anyone would resign from benefits resulting from diversification and allocate most of their funds in an individual company's shares.

At the same time, a quite different phenomenon is indicated by the statistics. In the studies carried out by Becht and Mayer, in the case of half of the public companies from non-financial sectors in Austria, Belgium, Germany and Italy, the dominant investor controls 52%, 56%, 57%, 54% of votes, respectively, at the General Shareholders' Meeting. In the case of Dutch, French, Spanish and Swedish corporations, the median values for the chief shareholders are 43,5%, 20%, 34,5% and 34,9%, respectively³. Similar results are presented by Thomsen, Pedersen and Kvist, whose analysis revealed that the average share of the most significant shareholder in German and French companies is 58,1% and 52,4%⁴. In Belgium, we can also observe a concentrated ownership structure; the average share of the dominant shareholder on this market ruled at a level of 21%⁵. On the other hand, the surveys carried out by Tamowicz and Dzierżanowski⁶ in Poland indicate that a level of ownership and control concentration in companies listed at Warsaw Stock Exchange at the end of the year 2000 was high and concurrent with the level observed for a considerable part of the capital markets of continental European countries⁷.

Between 2001 and 2004, among the public companies, there was not one company that would have completely atomised shareholders⁸. C. G. Holderness argues that the following factors contribute to investors holding substantial portfolios of shares⁹:

- benefits of control divided between shareholders in proportion to their share in the company's equity structure, and
- private benefits of control which resolve themselves to using the company's resources or taking advantage of benefits generated by the company, disregarding minority shareholders and, as a matter of fact, occurring at their expense in most cases.

Empirical analysis carried out by Barclay and Holderness proves that if a subject of transaction in the American market are big share blocks, a cumulative additional rate of return has been 5,6% on average, and additionally 33% of the members of the managing board are replaced with new managers within a year¹⁰. Increases of share prices are higher in cases when the control is taken over by a new shareholder who aims at modifying the company's activity directions with the board's support, and when the company is wholly taken over by the share block purchaser at last. If share block owners did not have

³ M. Becht, C. Mayer, *Corporate control in Europe*, „Revue d'Economie Politique”, 2002, Vol. 112, No. 4, pp. 471–512.

⁴ S. Thomsen, T. Pedersen, H.K. Kvist, *Blockholder ownership: Effects on firm value in market and control based governance systems*, „Journal of Corporate Finance”, 2006, Vol. 12, No. 2, pp. 246–269.

⁵ M. Hamadi, *Ownership concentration, family control and performance of firms*, „European Management Review”, 2010, Vol. 7, No. 2, pp. 116–131.

⁶ Analysis covers 210 non-financial entities: 190 companies listed on the Warsaw Stock Exchange (WSE) and 20 entities listed on unofficial markets.

⁷ P. Tamowicz, M. Dzierżanowski, *Własność i kontrola polskich korporacji ewolucja struktur własnościowo-kontrolnych*, „Transformacja gospodarki”, No. 110, IBnGR, Gdańsk 2002, p. 4.

⁸ D. Wajda, *Problemy związane z uczestnictwem akcjonariuszy mniejszościowych w walnych zgromadzeniach*, „Przegląd Prawa Handlowego”, 2006, July, p. 43.

⁹ C.G. Holderness, *A survey of blockholders and corporate control*, „Economic Policy Review”, 2003, Vol. 9, No. 1, p. 54.

¹⁰ M. Barclay, C.G. Holderness, *Negotiated Block Trades and Corporate Control*, „Journal of Finance”, 1991, Vol. 46, No. 3, pp. 861–78.

influence on the level of money flows generated by minority shareholders, it would be difficult to explain logically the aforementioned changes in share prices. This also means that the essential determinant of a company's value is not ownership concentration itself, but the skills, knowledge and experience of the owners of significant share packages. Also in this case, Barclay and Holderness¹¹ have attempted to verify empirically a proposition (theorem) that if all shareholders are remunerated in direct proportion to their share in the ownership structure – i.e. private benefits of control do not exist – big share packages should be sold at the same prices as the company's shares are quoted at a given moment. Results of research carried out by them have proven that big share packages are sold, on average, at a higher cost by 20,4% (median: 15,7%) than minority packages which are the subject of stock market trading. Later analyses carried out by various researchers have proven the hypothesis asserted by Barclay and Holderness¹². All of the above-mentioned papers, apart from Trojanowski's work, concern markets such as the American, Italian, Chinese, Slovenian, Israeli and Bulgarian. Under Polish conditions, due to a lack of databases in which such types of transactions would be noted, not many surveys concerning private benefits of control have been carried out. The first paper was Trojanowski's paper in which 54 transactions concluded in the period from July 1996 to February 2000 were analysed¹³. Later research performed by Jackowicz and Mielcarz concerned 133 observations during the period from 2002 to 2008¹⁴.

In case of litigations between shareholders or at evaluating a fair market value for the purposes of inheritance proceedings, it is necessary to adjust the valuation base value for a premium and discount on the score of financial and strategic control, whose source are private benefits of control presented below. The purpose of this paper is to review the definitions of the control premium and present the sources of private benefits of control.

Review of Control Premium Definitions

In the literature dedicated to company finance, a control premium is defined as a premium above the intrinsic value of a company, paid during transactions, which results in the transfer of control over a company. On the other hand, the intrinsic value (inherent, economic, fundamental value) is the value of assets perceived by the investor. The intrinsic value becomes a fair market value when other investors

¹¹ Ibidem.

¹² W. Mikkelson, H. Regassa, *Premiums paid in block transactions*, „Managerial and Decision Economics”, 1991, Vol. 12, pp: 511–517; J.H. Hwang, B. Hu, *Private benefits: Ownership versus control*, „Journal of Financial Research”, 2009, Vol. 32, No. 4, pp. 365–393; G. Nicodano, A. Sembenelli, *Private benefits, block transaction premiums and ownership structure*, „International Review of Financial Analysis”, 2004, Vol. 13, No. 2, pp. 227–244; A. Dyck, L. Zingales, *op.cit.*; A. Gregoric, C. Vespro, *Block trades and the benefits of control in Slovenia*, Economics of Transition, Vol. 17, No. 1, 2009, pp. 175–210; M. Massari, V. Monge, L. Zanetti, *Control premium in legally constrained markets for corporate control: The Italian case (1993–2003)*, „Journal of Management and Governance”, 2006, Vol. 10, No. 1, pp. 77–110; Z. Huang, X. Xu, *Marketability, control and the pricing of block shares*, „Journal of Banking & Finance”, 2009, Vol. 33, No. 1, pp. 88–97; M. Barclay, C.G. Holderness, J. Pontiff, *Private benefits from block ownership and discounts on closed-end funds*, „Journal of Financial Economics”, 1993, Vol. 33, pp. 263–91; M.J. Barclay, C.G. Holderness, D.P. Sheehan, *The block pricing puzzle*, Simon School of Business Working Paper, No. FR 01–05, 2001, available at: <www.ssrn.com/abstract=265712> [accessed 10 September 2015]; G. Trojanowski, *Equity block transfers in transition economies: Evidence from Poland*, „Economic Systems”, 2008, Vol. 32, No. 3, pp. 217–238; V. Atanasov, *Valuation of large blocks of shares and the private benefits of control*, 2001, available at: <www.mba.tuck.dartmouth.edu/ccg/PDFs/2002Conference/Atanasov_valueofblocks.pdf> [accessed 10 January 2015]; B. Lauterbach, R. Barak, *Estimating the private benefits of control from block trades: Methodology and evidence*, EFA 2007 Ljubljana Meetings Paper, available at: <www.ssrn.com/abstract=965668> [accessed 10 January 2015].

¹³ G. Trojanowski, *op. cit.*

¹⁴ K. Jackowicz, P. Mielcarz, *Premie w transakcjach blokowych w Polsce w latach 2002–2008*, Zeszyty Naukowe Nr 549, Ekonomiczne Problemy Usług Nr 39, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 2009, pp. 473–491.

perceive the same and equalisation of these two value categories takes place. If the intrinsic share value is higher than its price – the share is underestimated – then the analyst shall give a recommendation encouraging the purchase of shares; otherwise, he shall encourage selling. In the opinion of Meeker and Joy, the occurrence of a control premium is contingent upon the fulfilment of the following conditions¹⁵:

- having a control must guarantee access to privileges and benefits not available to minority shareholders,
- each of the members of the control group must be in a position to take advantage of them,
- the control group must be stable (the methods of ensuring its stability include retaining the control within a family, limiting the control group size and maintaining statutory entries or agreements that regulate questions of re-selling shares as being a property of control coalition), and
- control shares must be concentrated and isolated from minority shares that are the subject of purchase–sale transactions on the market every day.

On the other hand, factors that will effectively eliminate the control premium are:

- control package purchaser’s uncertainty with regard to the possibility of realisation of private benefits of control, and
- competition between sellers of shares.

Specifications of definitions used by American specialists in a company’s valuation can be found on the Business Valuation Resources (Glossary) website. Nevertheless, in many cases the definitions presented are very general and do not reflect the many nuances that are important in the valuation practice.

It should be emphasised here that exercising control over a company can take place at various levels of shares in the ownership structure. Legal acts in particular countries as well as companies’ articles of partnership create significant differences in the minority and majority shareholders’ rights. Also important to note is that in particular situations, such as when none of the owners possesses more than 50%, even an insignificant share in the ownership structure (swing block vote) can have the power to decide, in which case certain benefits of control will be assigned to the share; consequently, a discount on the score of minority shares should not be used. On the other hand, in a situation when law and articles require univocal consent of both owners in relation to all significant decisions, two 50% shares shall be treated as minority shares¹⁶.

Although they are used interchangeably in the literature, it is also essential that the terms “control” and “majority” do not denote the same state, since majority shares occur when they constitute more than 50% of equities and control shares denote a package of shares sufficient for realisation of control of a company¹⁷.

Pratt defines a control premium as follows: “It should be obvious that someone who buys a firm or a share therein will be inclined to pay additionally for a privilege of having a conclusive vote when making key decisions. This extra payment is just a control premium”. In the opinion of Lee (website) and Garber (website), a control premium consists of two elements:

- the so-called “pure control premium”. In other words, these benefits could be generated only as a consequence of taking control of a company and resolve themselves to exercising control over the managing board, nominating and dismissing members of this managing board, having influence on decisions of financial, strategic and even operational character, etc. This part of the premium does not include values (benefits) of a synergetic nature;
- benefits of control which are generated by the purchaser in consequence of synergies realised. It should also be emphasised here that, because of a risk connected with uncertainty regarding the

¹⁵ B. L. Meeker, O. Joy, *Price premiums for controlling shares of closely held bank stock*, „Journal of Business”, 1980, Vol. 53, No. 3, pp. 297–314.

¹⁶ S.P. Pratt, *The market approach to valuing businesses*, John Wiley and Sons, 2005, p. 82.

¹⁷ D. Zarzecki, *Metody wyceny przedsiębiorstw*, Fundacja Rozwoju Rachunkowości w Polsce, Warszawa 1999.

realisation of such benefits, the purchasers try to minimise remuneration paid on this score to the seller.

Furthermore, Mercer and Harms distinguish two levels of value above the value assigned to non-liquid shares which constitute a property of minority shareholders, and they consider that a traditional division into three levels of value should be extended by a strategic control value and a financial control value¹⁸:

- financial control value is reflected by a surplus which the purchasers are inclined to pay for taking over control of a business. The financial purchaser will be interested first of all in a high rate of return on investment, operational profitability of a business and predicted dynamics of its development (financed to a great extent by a debt) as well as potential possibilities of re-selling the shares at a high price. In such transactions, a subject of valuation is a fair market value that is a value of transaction between hypothetically interested purchasers and sellers;
- strategic control value reflects a surplus that is generated in the case of transactions in which benefits resulting from synergy occur. Strategic purchasers are inclined to pay more than financial purchasers, since they expect realisation of benefits resulting from synergy that will increase future cash flows. In this situation, a subject of valuation is the investment value, i.e. value for a given purchaser. Premiums paid in such transactions reflect benefits greater than privileges resulting from exclusive control of a firm.

In summary, both Pratt's and Niculita's as well as Mercer's and Harms's definitions emphasise the heterogeneous character of a control premium. In the present paper, we propose control premium division into financial control premium and strategic control premium as well as synergic premium.

Polish literature dedicated to problems of control premium and discount on the score of minority shares is scant. Both theoretical elaborations and empirical analyses are missing. These issues occur most frequently in the context of considerations about fusions, takeovers and, more rarely, valuation methods. In consequence, misuse of some notions can be observed. In Polish literature, Lewandowski and Stryzik define a control premium as a surplus above the company's market value from before the transaction announcement day or from that day¹⁹. However, they consider justification of paying a premium to be a synergy phenomenon only, while Buszko²⁰ and Piecek²¹, using the acquisition premium and the control premium concepts interchangeably, believe that it generates a surplus paid in taking over or fusion for the shares of a company being taken over, above their market value or the value resulting from valuation, in cases when the given company is not a public company. They perceive its sources in the character of both companies' ownerships, their financial conditions, capital market characteristics, number of purchasers and potential synergy as well as possible financial benefits obtained as a result of restructuring.

In summary, when estimating a premium on the score of financial and strategic control ("pure premium"), the analyst searches for:

- fair market value that is a value of transaction between hypothetically interested purchasers and sellers,
- a value estimated from the point of view of a purchaser interested in a high rate of return on the investment and also potential possibilities of re-selling shares at a high price,
- benefits that are not available for minority shareholders (so-called private benefits of control), and

¹⁸ Z.Ch. Mercer, T.W. Harms, *Business valuation, an integrated theory*, John Willey & Sons, Inc., Hoboken, New Jersey, 2008.

¹⁹ M. Lewandowski, M. Kamiński, N. Kulpa, W. Olechowski, R. Rybacki, J. Stryzik, M. Steindel, *Fuzje i przejęcia na tle tendencji światowych*, WIG-Press, Warszawa 2001.

²⁰ M. Buszko, *Premia akwizycyjna w Polsce na przykładzie fuzji i przejęć banków komercyjnych notowanych na GPW w Warszawie*, Prace Naukowe AE we Wrocławiu nr 974, Wrocław 2003.

²¹ G. Piecek, *Premia za kontrolę na polskim rynku kapitałowym – cz. I*, *Nasz Rynek Kapitałowy*, 2004, Vol. 10, No. 166, pp. 81–85.

- benefits of control that are of pecuniary character and are possible to transfer. Estimation of synergetic premium means searching for:
- investment value, i.e. a value for a given purchaser,
- a value estimated from the point of view of a purchaser interested in integration of activities of many entities, creating a given product or service which in consequence reduces costs of their preparation, promotion and distribution,
- synergy value that is a sum of additional benefits obtained from integration of the entity taken over with the new controlling party organisation. A synergy occurs first of all when the party taking control is able to diagnose potential gaps in the value, thanks to which advantageous, measurable effects can be obtained in a given time horizon, and
- benefits of control that are of pecuniary character and are transferable.

However, it should be emphasised here that realisation of synergetic benefits, both of operational character (better use of existing capital) and financial character (more advantageous capital structure), takes place gradually, and it often requires additional outlays and is extended in time. With respect to control in the Polish capital market, because of the lack of competition showing up, for example, in counter-calls, which would increase the prices proposed in the original calls, the purchasers will not be inclined to share with the sellers potential profits that could be generated as a result of taking over. Hence, it should be recognised that in a considerable majority of cases, the bargaining power is in the purchaser's hands, and situations when a synergetic premium occurs are rare, due to the fact that there are no other entities interested in acquiring a given company.

In the theoretical sphere, following the example of Barclay and Holderness, our attention focuses on the sources and the essence of private benefits of control (the so-called "pure premium"). We have also tried to compare control premium values calculated for Polish and American market.

Essence and Sources of Benefits of Control

Private benefits of control are derived from various sources; consequently, their classification is extremely difficult since it will not be comprehensive and separable from the nature of things. Hence, in this case, we speak instead of a typology that is a division of certain entities into groups possessing a certain common characteristic or a group of characteristics which constitute a certain type. Typological division is more flexible than classification. Dyck and Zingales emphasise that this is not an accident, but a consequence of the fact that, due to their character, private benefits of control cannot be observed directly, and thus it is difficult to measure them in a reliable way. The owner of a control package will try to take over the cash flows due to minority shareholders only in cases when it is very difficult to verify and prove it in court. Coates defines this phenomenon as follows: "...scale of ownership concentration is strictly related with a concept of private benefits of control. On the other hand, private benefits of control are all benefits derived by the shareholder disposing of a control package and which are not shared with minority shareholders adequately to their share in the ownership structure"²². Coates distinguishes three types of private benefits of control:

- "bad benefits of control" involve transfers of values from minority shareholders to shareholders disposing of a control package, which is ineffective in that the control package owner's profit is smaller than the shareholder's loss. They resolve themselves to paying excessive remunerations, assigning different type bonuses related to a function performed, transferring benefits from the company through so-called self-dealing transactions, practicing excessive aversion to risk and

²² J.C. Coates, *Ownership, takeovers and EU law: How contestable should EU corporations be?*, Discussion Paper No. 450, 12/2003, available at: <www.law.harvard.edu/programs/olin_center/> [accessed 20 November 2014].

making sub-optimal strategic or operational decisions aimed at satisfying personal interests of the shareholders disposing of a control package;

- “good benefits of control”, which authors such as Demsetz and Lehn call “amenity potential” involves transfers of values which are effective in that the control package owner’s profit is not smaller than the minority shareholder’s loss²³. This is equal to the situation in which, at the moment of sale, the present control package owner evaluates a value of control higher than anyone else. This situation is impossible, according to traditional, neoclassical business theory; nevertheless, it is frequently observed in practice, especially in the sports branch (professional athletic clubs) or media branch (on the Polish market, this rule is proven by the ownership structure of such companies as TVN or Cyfrowy Polsat S.A), as well as in the case of firms operating in the arts, fashion and music areas²⁴. Another example of good benefits of control are synergies which may develop between enterprises controlled by the dominant shareholder; they may be advantageous also for minority shareholders, even in the situation when they are not divided in direct proportion to the share in the shareholders structure; and
- “inherent benefits of control” are those such that, by their nature, cannot be shared with minority shareholders, irrespective of whether the minority shareholder would evaluate them higher or lower than the shareholder disposing of the control package. They refer to situations when entrepreneurs are inclined to bear costs in the form of lower expected rates of return, in exchange for autonomy and the right to make conclusive decisions (i.e., situations in which only one person in the firm can have the highest position in the hierarchy).

When defining private benefits of control as benefits unavailable to minority shareholders, Sepe divides them into those which lead to dispersion of values and those which have no degenerating impact on wealth of minority packages owners²⁵. A similar classification is used by Massari, Monge and Zanetti who, using a criterion of influence of private benefits of control on the level of the controlled company’s pecuniary flows, distinguish two types of private benefits of control²⁶:

- private financial benefits from flows generated by a controlled company and consumed exclusively by the shareholder disposing of control package, and
- private benefits of control realised by the shareholder disposing of the control package without infringing on the minority shareholders’ interests.

On the other hand, Erhardt and Nowak analyse private benefits of control in two planes: pecuniary and regarding the possibilities of transferring them²⁷. Additionally, Astrachan and Jaskiewicz accentuate the importance of emotional questions with regard to family businesses²⁸.

In contrast with Coates and Holderness, Ehrhardt and Nowak are of the opinion that the existence of any benefits, pecuniary or non-pecuniary, related to any kind of convenience or social position, in which the minority shareholders do not participate, means a deviation from the realisation of a purpose function that is maximising the company’s total worth. Additionally, a problem of underinvestment

²³ H. Demsetz, K. Lehn, *The structure of corporate ownership: Causes and consequences*, „The Journal of Political Economy”, 1985, Vol. 93, No. 6, pp. 1155–1170.

²⁴ S. Djankov, C. McLiesh, T. Nenova, A. Shleifer, *Andrei: Who owns the media?*, 2001, available at: <www.ssrn.com/abstract=267386> [accessed 18 January 2014]

²⁵ S.M. Sepe, *Private sale of corporate control: Why the European mandatory bid rule is inefficient*, Arizona Legal Studies Discussion Paper No. 10–29, 2010, available at: <www.ssrn.com/abstract=1086321> [accessed 5 January 2014]

²⁶ M. Massari, et al., op. cit.

²⁷ O. Ehrhardt, E. Nowak, *Private benefits and minority shareholder expropriation (or what exactly are private benefits of control?)*, EFA 2003, Annual Conference Paper No. 809.

²⁸ J.H. Astrachan, P. Jaskiewicz, *Emotional returns and emotional costs in privately held family firms: Advancing traditional business valuation*, „Family Business Review”, 2008, Vol. 21, No. 2, pp. 139–149.

(undercapitalisation) also appears here, which results from the fact that obtaining private benefits of control limits the possibility of gaining outside funds intended for financing attractive projects.

Studying private benefits of control realised by the owners of control packages of banks which are private companies, Meeker and Joy emphasise the importance of prerogatives unavailable to minority package owners²⁹.

As far as Benos and Weisbach are concerned, they define private benefits of control as benefits that fall to the managers and owners disposing of a control³⁰. A similar opinion is represented by Hwang, according to whom private benefits of control should be divided into those which fall to managers and those which become a share of the owners³¹. The division proposed by him is of no significance in firms where the owner's function is strictly related to managerial function. In the remaining cases, on the other hand, attention should be paid to the question of what a source of private benefits of control actually is: a significant package of shares or managerial control over the firm. Unfortunately, it is difficult to carry out an analysis that would allow us to measure each of these types of benefits, due to the fact that it is very hard to identify situations that have to do with managerial function only or owner's function only. The following problem is that, in both cases, sources of private benefits of control may be the same (e.g. displacing of resources to entities whose owner is the manager or owner of significant package of shares). Results of research carried out by Hwang prove that a scale of private benefits of control increases slowly as the share in the ownership structure grows, but it increases significantly in relation to an increase of the managerial control scale. Another explanation of the existence of private benefits of control is the fact that they are compensation for the control package owners for maintaining a non-diversified portfolio. Ehrhardt and Nowak assert that the methodology used by researchers such as Dyck and Zingales and Barclay and Holderness reflects only those private benefits of control which are transferable, but it omits those which are not of such character. Ehrhardt and Nowak emphasise that this type of privilege would not represent any worth from the point of view of successive owners, whereas the present owners would protect them when they decided to introduce the company into the market. Furthermore, it is very difficult to create measures of their level; therefore, most researchers, when analysing private benefits of control, concentrate on their manifestations, such as overestimated remunerations and premiums. Results of analyses carried out on the German market prove clearly that introducing preference shares into a financing structure considerably reduces the risk of losing control. Therefore, Ehrhardt and Nowak, when analysing results of different types of private benefits of control, use a non-standard measure: the effects of original issues of preference shares.

Nevertheless, in the context of business valuation, attention should be focused on benefits of a pecuniary and transferable character.

Review of Researches Concerning Private Benefits of Control

Researches carried out by Barclay and Holderness prove that, if a subject of transaction on American market are big share blocks, a cumulative additional rate of return has been 5,6% at average, and at the same time 33% of the members of managing board are replaced with new managers within a year³². Increases of share prices are higher in case when the control is taken over by a new shareholder and when the board does not object to the activities taken by him, aiming at modification of the company's activity directions, and when the company is wholly taken over by the share block purchaser finally. If

²⁹ B. L. Meeker, O. Joy, op. cit.

³⁰ E. Benos, M.S. Weisbach, *Private benefits and cross-listings in the United States*, NBER Working Paper No. W10224, January 2004, available at: <www.ssrn.com/abstract=486228> [accessed 15 March 2014]

³¹ J. Hwang, B. Hu, op. cit.

³² M. Barclay, C.G. Holderness, op. cit.

share block owners did not have influence on a level of money flows generated by minority shareholders, it would be difficult to explain logically the aforementioned changes in share prices. It also means that in fact a company value is not determined by ownership concentration itself, but skills, knowledge and experience of the owners of significant share packages. Also in this case, Barclay and Holderness as first have attempted to verify empirically a proposition (theorem) that if all shareholders are remunerated in direct proportion to their share in the ownership structure – i.e. private benefits of control do not exist – big share packages should be sold at the same prices as the company's shares are quoted at a given moment³³. Results of researches carried out by them have proved that big share packages are sold, at average, more expensively by 20,4% (median: 15,7%) than minority packages which are the subject of stock market trading. Following researches carried out by such researchers as Mikkelson and Regassa, Barclay and Holderness and Pontiff, Nicodano and Sembenelli, Hwang, Barclay and Holderness as well as Sheehan, Dyck and Zingales, Gregoric and Vespro, Huang and Xu, Massari and also Monge and Zanetti, Lauterbach and Barak, Trojanowski, Atanasov have proved hypotheses made by Barclay and Holderness. All of above mentioned researches, apart from Trojanowski's work, concern markets such as American, Italian, Chinese, Slovenian, Israeli and Bulgarian. Under Polish conditions, due to lack of databases in which such type transactions would be noted, not many researches concerning private benefits of control have been carried out. The first paper was the Trojanowski's (2008) paper in which 54 transactions concluded in period from July 1996 to February 2000 were analysed. In case of Polish market, benefits of control measured based on block premium were positive and statistically significantly different than zero, nevertheless their value turned out to be very small, amounting to 6,80%, whereas standardized block premium ruled at a level 0,98%³⁴. Even smaller level of control premium, since negative, has been noted in their studies by Jackowicz and Mielcarz, whose researches concern 133 transactions concluded in a period 2002–2008³⁵.

Dyck and Zingales, when analyzing level of benefits of control in 39 countries have taken into account also Poland, however it should be emphasized that only four transactions have been included in their base and considering them a premium has been estimated at a level 13% (standardized block premium)³⁶. Byrka–Kita and Czerwiński have evaluated the level of benefits of control on the basis of transactions concluded in period 1991–2009 and it was 16,62% (block premium estimated on the basis of average value of market price in the period from 7th to 30th day after transaction), whereas standardized block premium ruled at a level 1,52%³⁷.

The premiums observed on Polish capital market are relatively low due to the fact that the Polish control market is characterized by much lower competitiveness than it is in case of American market. Auction sales between competing bidders take place on it rarely. Additionally, it coincides with a fact that, as it has been rightly emphasized by Lewandowski and Strysik, realization of synergetic benefits of both operational character (better use of existing capital) and financial character (more advantageous capital structure) takes place gradually, requires extra outlays very often and is extended in time. Consequently, due to a risk connected with uncertainty regarding deriving of such type benefits, the purchasers try to minimize remuneration paid on this score³⁸.

³³ M. Barclay, C.G. Holderness, *Private benefits from control of public corporations*, „Journal of Financial Economics”, 1989, Vol. 25, No. 2, pp. 371–395.

³⁴ C. Trojanowski, op.cit.

³⁵ K. Jackowicz, P. Mielcarz, op.cit.

³⁶ A. Dyck, L. Zingales, *Private benefits...*, op. cit.

³⁷ K. Byrka–Kita, M. Czerwiński, *Premia z tytułu kontroli na polskim rynku kapitałowym* (współautor: Mateusz Czerwiński), *Ekonomista* 1/2013, Polska Akademia Nauk, Polskie Towarzystwo Ekonomiczne, Wydawnictwo KeyText, Warszawa 2013, pp. 127–155.

³⁸ R.A. Walkling, R.O. Edmister, *Determinants of Tender Offer Premiums*, „Financial Analysts Journal”, 1985, Vol. 41, No. 1, pp. 27–37.

Conclusion

A justified doubt appears, why the estimates of benefits of control in form of calculated premiums ruled at so low level – the reason of such state is not certainly an exceptionally effective system of minority shareholders protection and effectiveness of judiciary in Poland, but rather low liquidity of big share blocks and information imperfection of the Polish capital market. However, a number of cases of conflicts of interest between dominant and minority shareholders have occurred on the Polish stock exchange market. There are numerous examples of exploiting minority shareholders by dominant investors: using transfer prices (Stomil Olsztyn, Orbis, BSK, Mostostal Warszawa, Dębica, Agros among others), private placements (Suwary), offering low prices in calls with simultaneous differentiation of a price paid for a control package (BPH, Polifarb Dębica), indirect taking over cases (Agros, Mieszko, C&C Energy). It is proper to quote here Dyck and Zingales opinion, according to which private benefits of control occur commonly, however their direct measurement is impossible due to the fact that their realization is unlawful. In consequence, if minority shareholders were in a position to prove that shareholders disposing of a control package realize any benefits at the expense of flows due to all shareholders, they could effectively oppose them.

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Ryszard Węgrzyn
Cracow University of Economics, Poland

INFLUENCE OF INTEREST RATE AND TRANSACTION COSTS ON THE P&L PROFILES OF OPTIONS

Summary

The aim of this paper is to draw attention to an influence of the interest rate and transaction costs on the shaping of P&L profiles of the basic option positions, and, as a result, on the shaping of the profiles of option strategies. The paper presents an influence of those factors on selected spread, straddle and strangle strategies, using, as an example, the options on the WIG20 index, listed on the Warsaw Stock Exchange. Unlike transaction costs which have an adverse effect on the P&L profiles of options, an influence of the interest rate depends on the type of the basic positions held. P&L profiles of options or option strategies commonly presented in the literature are shown in a simplified way, assuming zero the interest rate and zero transaction costs.

* * *

Introduction

The P&L profiles of options are usually presented in the literature in a simplified way, assuming zero the interest rate and zero transaction costs. In such a case, profit for a given basic position is the sum of nominal payments on account of a specific position. However, it should be remembered that on the real market there is a certain level of the interest rate and transaction costs, the factors that an investor should take into consideration. Rejection of the assumptions of zero the interest rate and zero transaction costs causes the determination of not only different levels of break-even points but also of the whole P&L profiles.

The aim of the article is to draw attention to an influence of those factors on the shaping of the P&L profiles of the basic option positions, as well as on the shaping of the profiles of selected option strategies.

The paper consists of two basic parts. Part one determines an influence of the interest rate and transaction costs on the P&L profiles of the basic option positions, whereas part two presents an influence of those factors on the basic option strategies: a spread, a straddle and a strangle.

Influence of interest rate and transaction costs on the profiles of the basic option positions

Table 1 presents payments on account of options for individual basic positions. At the date of taking the position, the option buyer pays a certain price to the seller, whereas at the exercise date, the buyer may receive a specific amount depending on the shape of the price of the underlying in relation to the strike price. The amount the buyer may receive is the value of a possible adverse payment for the option seller.

Table 1. Payments on account of standard options settled in cash

Basic option positions	Payments on account of options	
	at the date of taking the position	at the exercise date
long call	$-C$	$\max(S - K; 0)$
short call	C	$-\max(S - K; 0)$
long put	$-P$	$\max(K - S; 0)$
short put	P	$-\max(K - S; 0)$

Notes: C – price of a call option, S – price of the underlying, K – strike price, P – price of a put option.
Source: author's own study.

Based on the payments on account of options, as presented in Table 1, we can define simplified P&L profiles for individual basic positions. The profiles can be defined in the following way:

- long call: $\max(S - K; 0) - C$,
- short call: $C - \max(S - K; 0)$,
- long put: $\max(K - S; 0) - P$,
- short put: $P - \max(K - S; 0)$.

In addition to defining the maximum profit and the maximum loss for individual positions for investors, also break-even points are very important, meaning the price level of the underlying from which the investor shall profit or lose. Generally, with the adopted simplification, the break-even point (BEP) for a call option is calculated as the sum of the strike price and the option price:

$$BEP = K + C,$$

whereas for a put option as the difference between the strike price and the option price:

$$BEP = K - P.$$

The consideration of the interest rate in P&L profiles means the consideration of the value of individual payments in time. Since the payment for an option takes place at the date of taking the position, and the payment related to the fulfillment of the right at the option exercise date, it is a practical approach to define the values of both those payments for the date of taking the position. It means discounting the payments occurring at the exercise date. To develop formulas for the P&L profile for a specified position, continuous capitalization was applied.

In order to consider transaction costs, the following were distinguished: the costs of taking the position, incurred on opening the position, and costs of terminating the position, incurred on closing the

position and related to the exercise or expiration of an option. Analogously to the payments for options at exercise date, the costs of terminating the position are also subject to discounting.

Thus, upon considering the interest rate and transaction costs, the profit for individual basic positions on their holding can be put down in the following way:¹

- long call position: $\frac{\max(S - K; 0) - kl}{e^{r \cdot t}} - C - kp$,
- short call position: $C - kp - \frac{\max(S - K; 0) + kl}{e^{r \cdot t}}$,
- long put position: $\frac{\max(K - S; 0) - kl}{e^{r \cdot t}} - P - kp$,
- short put position: $P - kp - \frac{\max(K - S; 0) + kl}{e^{r \cdot t}}$,

where: kl – the cost of terminating the position, kp – the cost of holding the position, r – the interest rate, t – time for the option exercise, e – constant.

The cost of taking the position and the cost of terminating the position are put down in the above formulas as amounts, although in practice brokerage houses on the Polish market define them in various ways. The cost of taking the position is often expressed as percentage in relation to the transaction value but there are also limitations in the form of the minimum and maximum amount. On the other hand, the cost of terminating the position often depends on the manner of closing the position (expiration of an option, the exercise, resignation from the exercise) and is specified as an amount or percentage in relation to the settlement amount.

Moreover, it should be noted that a put option position is also connected with an obligation to lodge a margin deposit. The margin in a specified part can have the form of deposited securities (e.g. treasury bonds), and of cash in the remaining part. Thus, such a deposit can be related to the costs of lost benefits for an investor.

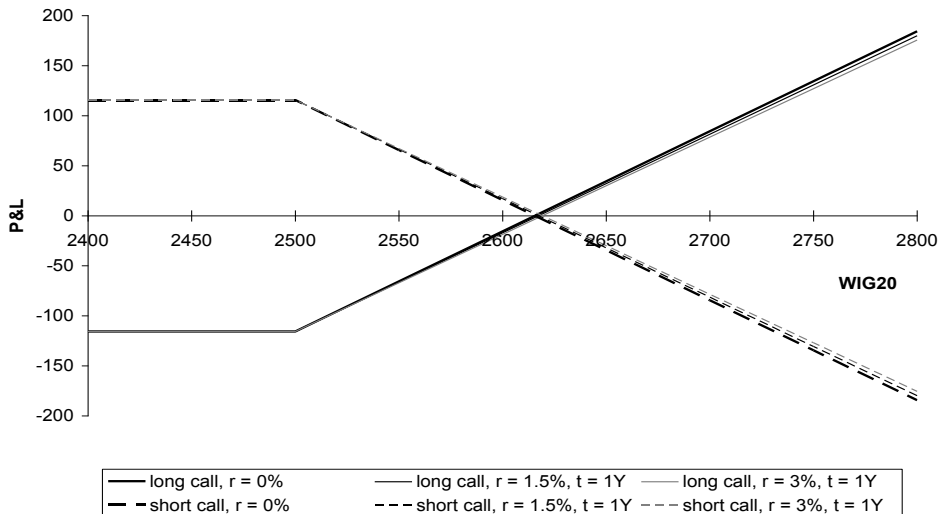
To illustrate an influence of the interest rate and transaction costs on P&L profiles, the following figures present adequate examples on the basis of selected options on the WIG20 index, listed on the Warsaw Stock Exchange.

Figure 1 presents P&L profiles for long call and short call positions with zero the interest rate ($r = 0\%$), P&L profiles at the rate on the level of 1.5% ($r = 1.5\%$) and a yearly period for the option exercise ($t = 1Y$), as well as P&L profiles at the rate on the level of 3% ($r = 3\%$) and a yearly period for the option exercise. An exemplary call option on the WIG20 index has the exercise price 2,500, and its price is 115.60.

Based on that figure we can claim that P&L profiles for a call option change upon the consideration of the interest rate with the price of the underlying higher than the exercise price of the option. The profit level from a long position deviates to a higher and higher degree downwards with the growth of the underlying price, whereas the profit level from a short position deviates more and more upwards. Moreover, the scale of deviations is influenced by the interest rate and the option exercise period. A longer period or a higher rate level cause bigger deviations in relation to P&L profiles at zero the interest rate.

¹ See: R. Węgrzyn, *Opcje jako instrumenty ograniczania ryzyka cen akcji. Problemy optymalizacji*, Publishing House of the Cracow University of Economics, Kraków 2013, pp. 29–34.

Figure 1. P&L profiles for long call and short call positions considering the interest rate



Source: author's own study.

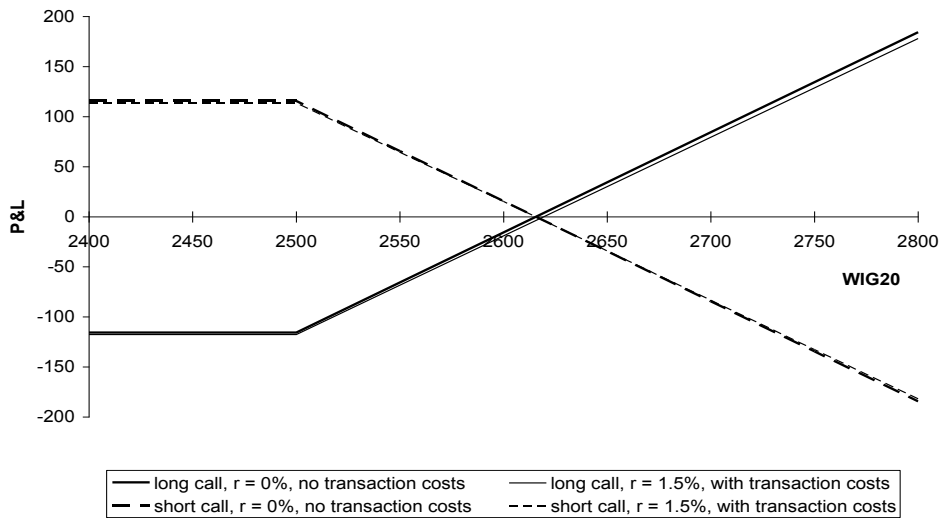
It can be also observed that P&L profiles from long and short positions still remain symmetrical. However, the consideration of the interest rate causes the shift of the break-even point to a higher level. Thus, generally, we can claim that upon considering the interest rate, the P&L profile of a long position looks less beneficial, and the profile of a short position seems more beneficial for an investor.

The symmetry of both profiles is destroyed only by the consideration of transaction costs which causes in every case a decrease in the profit level, thus, the switch of profiles downwards. As an example, Figure 2 presents P&L profiles for a long call and a short call position considering the interest rate ($r = 1.5\%$, $t = 1Y$) and transaction costs. In the figure we can observe that the consideration of transaction costs causes the worsening of the P&L profile on the long and the short position. The break-even point in the case of the long position has been switched to a higher level, and in the case of the short position to a lower one.

The consideration of the interest rate and transaction costs influences analogously P&L profiles for a long put and a short put position. Exemplary profiles for those positions are presented in Figure 3. In this case, a put option on the WIG20 index has the exercise price 2,500, and its price is 142.45. The consideration of the interest rate alone leads to bigger and bigger deviations from the initial profiles alongside the drop of the price of the underlying within the range in which the price of the underlying is lower than the strike price. For the long position, there are deviations downwards from the initial profile, and for the short position they go upwards. The break-even point is shifted to a lower level. Additional consideration of transaction costs brings about the shift of P&L profiles of both positions downwards. In the case of the long position it means the shift of the break-even point to a lower level, and in the case of the short position to a higher one.

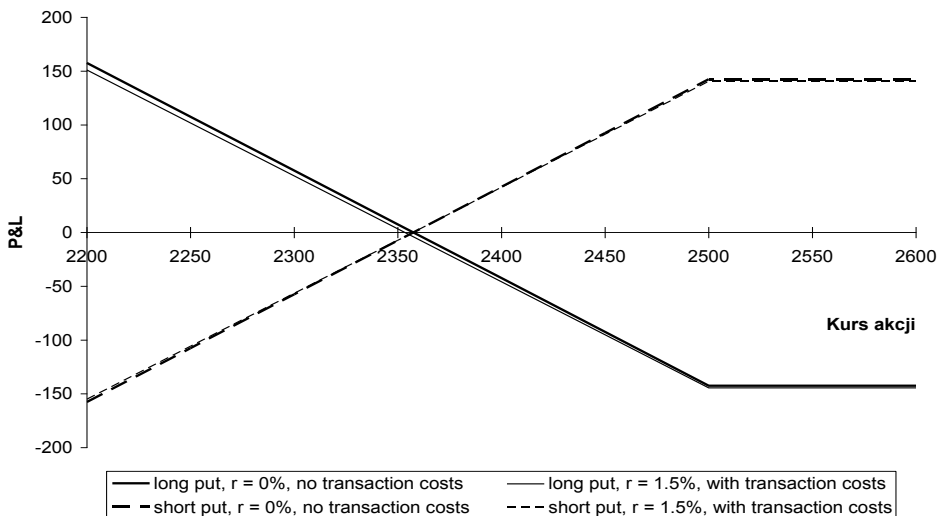
It is worth paying attention to the fact that in the case of a short position (short call, short put), when the options are deep in-the-money, an effect arising from the consideration of the interest rate is bigger than the effect arising from the consideration of transaction costs. In this situation, the modified profit level deviates upwards from the initial profile.

Figure 2. P&L profiles for long call and short call positions considering the interest rate and transaction costs



Source: author’s own study.

Figure 3. P&L profiles for long put and short put positions considering the interest rate and transaction costs



Source: author’s own study.

Unlike the simplified approach, where the long position and the short position in respect of the same option means the same level of the break–even point, the consideration of the interest rate and transaction costs causes that the level of break–even points will be different. Adopting the designation given above, the break–even points for individual basic positions can be put down in the following way:

- long call: $BEP = K + (C + kp) \cdot e^{r \cdot t} + kl$,
- short call: $BEP = K + (C - kp) \cdot e^{r \cdot t} - kl$,
- long put: $BEP = K - (P + kp) \cdot e^{r \cdot t} - kl$,
- short put: $BEP = K - (P - kp) \cdot e^{r \cdot t} + kl$.

Influence of interest rate and transaction costs on the profiles of selected strategies

Vertical bull spread strategy

The basic types of the strategies of investing in options include the following strategies: a *spread*, a *straddle* and a *strangle*. *Spread* strategies are usually built on the basis of options of the same type, differing with the strike price or the expiration date. *Straddle* strategies include options of various type, with the same strike prices and the same expiration dates, whereas *strangle* strategies are created from options of various type, with various strike prices and the same expiration dates.²

Among *spread* strategies, the *vertical bull spread* is quite a popular strategy. In *vertical spread* strategies options differ with the strike price but they have the same expiration dates. The *vertical bull spread* is a strategy focused on the growth of the price of the underlying. This type of strategy can be created both by means of call options and put options. To obtain a *vertical bull spread* the following should be done: to buy a call option with a lower strike price and to sell the call option with a higher strike price or to buy a put option with a lower strike price and sell the put option with a higher strike price.

The *vertical bull spread* strategy, presented as an example in Figure 4, consists of call options and does not consider the interest rate or transaction costs. To build it, options on the WIG20 index, listed on the Warsaw Stock Exchange were used. Call option on the WIG20 index were purchased with the strike price 2,400 and premium 165.80, and call options on the WIG20 index were sold, expiring at the same date with the strike price 2,500 and premium 115.60.

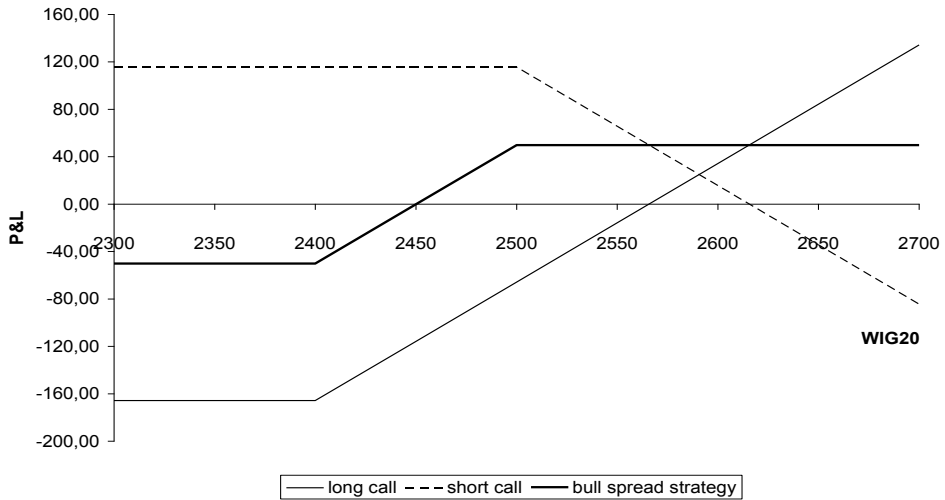
As it results from Figure 4, the P&L profile from this strategy shapes on the constant level to the lower strike price of the option (2,400), then it goes up within the range between the strike prices, and from the higher strike price (2,500) it shapes again on the constant level.

In order to determine an influence of the interest rate and transaction costs on the result of this strategy, Figure 5 presents the basic strategy without these factors and the result of the strategy modified by those factors. As we can observe in that figure, the result of the strategy considering the interest rate and transaction costs is generally worse than without those factors. The difference in the P&L profiles of the basic strategy and the modified strategy is constant to the level of the lower strike price (2,400) and results from the considered transaction costs. Within the range between strike prices (2,400 – 2,500), the difference in P&L profiles increases, which arises from the influence of the interest rate on the long call

² See for example: K. Spremann, *Investition und Finanzierung*, Oldenbourg Verlag, München 1991, pp. 551–554; R.W. Kolb, *Financial Derivatives*, New York Institute of Finance, New York 1993, p. 163 and the next; *Options– und Termingeschäfte I. Einführung in den Handel mit Optionen und Futures*, ÖTOB, Wien 1993; S. Natenberg, *Option Volatility & Pricing. Advanced Trading Strategies and Techniques*, McGraw–Hill, New York 1994, p. 19 and the next; J. Hull, *Kontrakty terminowe i opcje. Wprowadzenie*, WIG–Press, Warszawa 1997, p. 252 and the next; W. Tarczyński, *Instrumenty pochodne na rynku kapitałowym*, PWE, Warszawa 2003, pp. 123–133; D.M. Chance, *An Introduction to Derivatives & Risk Management*, Thomson South–Western, Mason 2004, pp. 234–261; K. Jajuga, T. Jajuga, *Inwestycje. Instrumenty finansowe, aktywa niefinansowe, ryzyko finansowe, inżynieria finansowa*, Wydawnictwo Naukowe PWN, Warszawa 2007, pp. 322–328; E. Dziawgo, *Wprowadzenie do strategii opcyjnych*, Nicolaus Copernicus University in Toruń, Toruń 2010, p. 160 and the next.

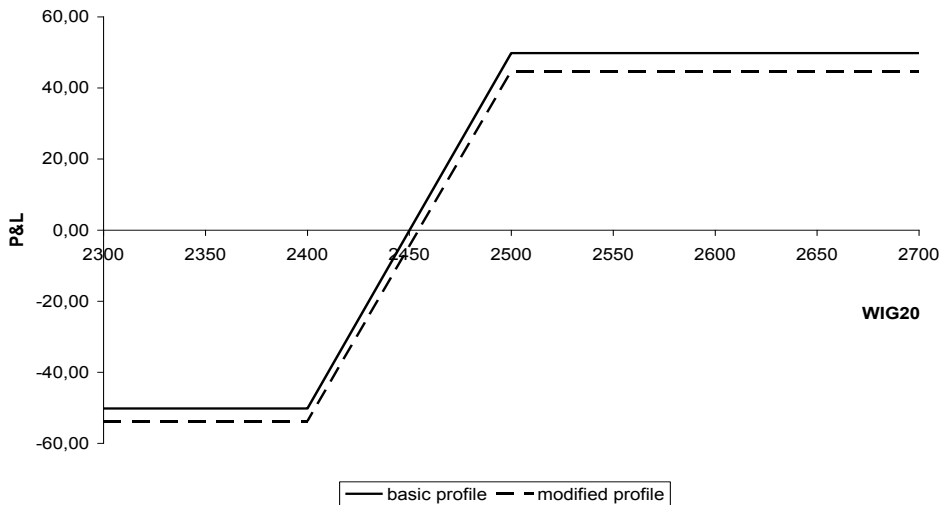
position. As a result, from the higher strike price (2,500), the difference is bigger and on the constant level. With the use of a put option to build such a strategy, P&L profiles will differ analogously.

Figure 4. Vertical bull spread strategy



Source: author's own study.

Figure 5. Influence of the analyzed factors on the result of the vertical bull spread strategy



Source: author's own study.

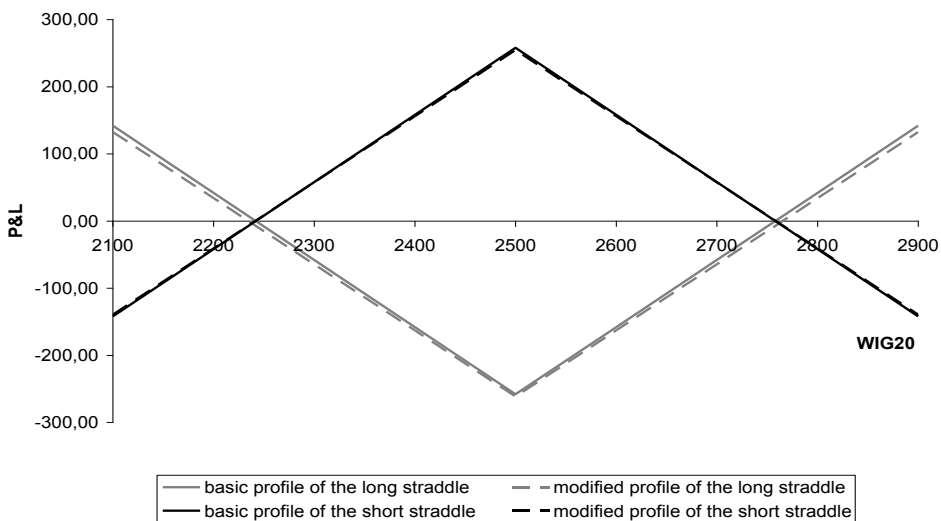
Straddle strategy

Another basic type of option strategies is a *straddle*. The strategy consists simultaneously of call and put options which have the same strike price and expire at the same date. When buying both such options we talk about the *long straddle* strategy, and when selling, about the *short straddle*. A *long straddle* is focused on a considerable change in the price of the underlying because this is when an investor can achieve unlimited profits. When the price is stable, an investor makes a loss, the maximum value of which occurs with the price of the underlying equal to the strike prices and is equal to the sum of the prices of the applied options. In the case of a *short straddle* it is the opposite, namely, with the price of the underlying equal to the strike price, an investor achieves the maximum profit, whereas with a considerable change in the price of the underlying, an investor's losses grow with the scale of changes.

As an example, a *short straddle* was built by means of options on the WIG20 index. Call options were sold with the strike price 2,500 and premium 115.60 and put options were sold, expiring at the same date, with the strike price also on the level of 2,500 and premium 142.45. Figure 6 shows the basic profile of this strategy and the profile modified by the analyzed factors. On the basis of this figure we can claim that with the price of the underlying (WIG20) equal to the strike prices (2,500), the modified profile turns out to be the worst in comparison with the basic profile. It arises from the consideration of transaction costs with reference to both basic positions. With the deviation of the price of the underlying from the strike price, the advantage of the basic profiles decreases, which results from the consideration of the interest rate in relation to the basic positions. With a considerable deviation of the underlying price from the strike price, the intersection of the profiles takes place and the profile modified by the analyzed factors indicates a better result than the basic profile. Based on this, we can draw a conclusion that the lower transaction costs or the higher the interest rate, the closer the profiles intersection will be to the level of the strike prices.

At the same time, the figure shows profiles for the long straddle. In this case, however, the modified profile generally shows a worse result of this strategy. The modified profile deviates more and more downwards from the basic profile with the deviation of the price of the underlying from the strike prices.

Figure 6. Influence of the analyzed factors on the result of the *straddle* strategy



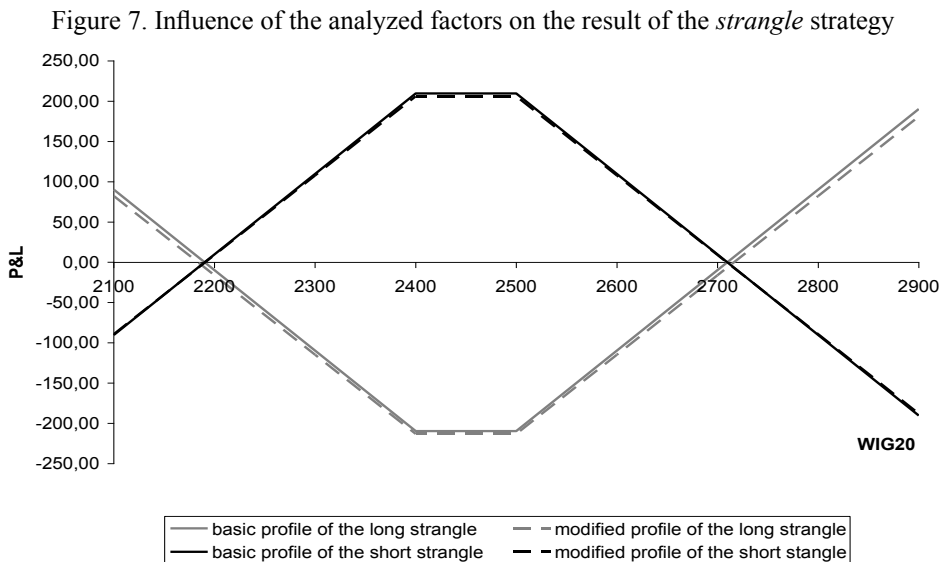
Source: author's own study.

Strangle strategy

The *strangle* shows certain similarity to the *straddle*. However, the strategy involves options with different strike price. A *long strangle* forms from a long call with a higher strike price and a long put with a lower strike price. The P&L profile on it is similar to the profile of a *long straddle*, but the maximum loss level occurs not in one point but within the range from the lower to the higher strike price of the applied options. On the other hand, a *short strangle* involves a short call with a higher strike price and a short put with a lower strike price. The P&L profile on this strategy is similar to a *short straddle* but the maximum profit occurs within the range from the lower to the higher strike price of the used options.

As an example, the *short strangle* strategy was built for a short put with the strike price 2,400 and premium 94.05 and a short call expiring at the same date with the strike price 2,500 and premium 115.60. Figure 7 presents the basic profile of this strategy and the profile considering the analyzed factors. Based on it, we can find out similar relations as in the case of the straddle strategy. The difference in relation to the *short straddle* is that the modified profile of this strategy is the worst within the range between the strike prices of the used options (2,400 – 2,500) and depends on the level of the incurred transaction costs.

The modified profile of a *long strangle*, presented in that figure, shapes analogously. Within the range between the strike prices of the used options (2,400 – 2,500) it deviates downwards from the basic profile, which results from the consideration of transaction costs, whereas outside that range it deviates more and more downwards, which arises from the consideration of the interest rate, too.



Source: author's own study.

Conclusion

What arises from the conducted deliberations is that transaction costs have always adverse effect on the shaping of P&L profiles of option strategies, whereas the impact of the interest rate depends on the basic positions held. Generally, long positions worsen the strategy result, and short positions improve them. However, it should be remembered that holding a short position is related to the obligation of lodging a margin deposit. Although in a big part the margin can consist of safe securities, it can be also related to the costs of lost benefits for an investor.

The option strategies presented in the paper are of static character. In each case it was assumed that the investor adopts a specific strategy and maintains it till the date of the option exercise. It should be noted that upon taking a specific strategy, an investor can terminate it any time, taking opposite positions. In such a dynamic approach, an investor is mainly focused on the basic factors, such as an the option price or the volatility of the underlying, which to the greatest extent influence the value of the strategy in short-term. In such a period, the interest rate, particularly with its relatively low level, does not perform a significant function but transaction costs, which limit an investor's activeness, become an important factor.

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Maciej Woźniak

AGH University of Science and Technology, Poland

ACCESS OF ENTERPRISES TO BANK CREDIT IN POLAND BEFORE AND AFTER ECONOMIC CRISES

Summary

The paper focuses on access of companies to bank credit in Poland before and after economic crises. It covers the criteria for granting both short-term and long-term credit and distinguishes two types of clients: small and medium-sized and large enterprises. The reasons of changes in credit policy of banks in Poland are analyzed too. At the end of the paper, the conclusions of the research are presented.

* * *

Introduction

In the last two decades, small and medium-sized enterprises (SME) have very important influence on the social-economic development of Poland. However, they have been growing very slow, particularly in the last years, in comparison to other neighborhood countries¹. One of the constraints of their development is not sufficient access to foreign capital. *SME has many problems in access to bank credits which are the most important source of foreign capital for them*². *The explanation could be the thesis of Galbraith which concerns the difficulty of access to bank credit by SME. Under oligopolistic market and restrictive monetary policy, SME are discriminated in access to bank credit. On the contrary, large enterprises (LE) have access to other sources of finance. That is one of the reason those companies have also better access to bank credit*³. Another explanation is the thesis of credit rationing by Stiglitz and

¹ M. Woźniak, *System wspierania małych i średnich przedsiębiorstw*, Wydawnictwa AGH, Kraków 2012, p. 41.

² See for example: T. Łuczka, *Kapitał obcy w małym i średnim przedsiębiorstwie*, Wydawnictwa Naukowe PWN, Warszawa 2001, pp. 108–111; K. Wach, *Regionalne otoczenie małych i średnich przedsiębiorstw*, Wydawnictwo Uniwersytetu Ekonomicznego w Krakowie, Kraków 2008, pp. 129; J. Duda, *The role of bank credit In investment financing of the small and medium-sized enterprise sector In Poland*, „Managerial Economics”, 2013, no 13, pp. 7–20.

³ J.K. Galbraith, *Market Structure and Stabilization Policy*, „The review of Economics and Statistics”, 1957, no 39, pp. 124–133.

Weiss. It is connected with the asymmetry of information between a bank and a client⁴. It was the area of research of other economist too.⁵

Latest research revealed that between 2011 and 2013 in the European Union the perceived and actual financing constraints rose for SME and fell for LE. Moreover, the former faced more problems than the latter. The most important constraints concerned bank loans and bank working capital. The reasons were too high cost, credit rationing and discouraged borrowers. As far as credit rationing is concerned this problem was connected rather with the volume than price. The level of actual financing constraints was higher in countries which had the biggest economic problems like Greece or Spain. In Poland it was near the average for all Member States⁶.

Therefore, one of the basic elements of economic policy towards SME in the USA and the EU is to facilitate access to bank credit. This includes loan guarantee as well as microcredits schemes which can operate separately or in conjunction with each others. Some countries decided only for one of these support programs⁷. However, the others have implemented both types of the schemes⁸.

In connection to this, the question is of interest of many governments included Poland. However, the economic crises could change the policy of commercial banks towards their client. Therefore the aim of the paper is to answer the following questions: did the commercial banks in Poland change the criteria of granting credits to enterprises in post crises in comparison pre crises period. If there were any differences, what were the reasons.

Methodology of survey

The survey was conducted among 26 banks which a total share of credits to businesses and households in the portfolio of the banking sector is 83%. The answers of banks were weighted by the share of a bank in the market segment. The importance of individual banks in a given market segment represented the interests of its credits in comparison of all the 26 banks that responded to the survey, broken down by type of credit. Banks was supposed to indicate whether, in the last three months they changed the criteria for granting credits to enterprises. If the lending criteria have not changed in the last three months, they ticked the box “not changed”, even if they were tightened or eased compared to the long-term average. The result was the difference between the percentage of responses “eased considerably” and “eased a little” and the percentage of responses “tightened considerably” and “tightened a little”. A negative index indicates a tendency to tighten criteria.

⁴ J.E. Stiglitz, A. Weiss, *Credit rationing in markets with imperfect information*, „The American Economic Review”, 1981 no 71, pp. 393–410.

⁵ See for example: M. Cowling, P. Westhead, *Bank lending decisions and small firms: Does size matter?*, „International Journal of Entrepreneurial Behaviour & Research”, 1996, no 2, pp. 52–60; T. Łuczka, *Kapitał obcy w małym i średnim przedsiębiorstwie*, Wydawnictwa Naukowe PWN, Warszawa 2001; M. Cowling, *The role of loan guarantee schemes in alleviating credit rationing in the UK*, „Journal of Financial Stability”, 2010, no 6, pp. 36–44; A. Bhalla, M. Kaur, *SME Access to Finance: An Analysis of Attitude and Decision-making Criteria of Commercial Banks*, „Asia-Pacisif Journal of Management Research and Innovation”, 2013, no 8, pp. 69–76.

⁶ *European Competitiveness Report 2014. Helping Firms Grow*, Commission Staff Working Document, SWD(2014)6319 final, pp. 52–54.

⁷ S. Karafolas, M. Woźniak, *Loan guarantee schemes: private and public examples*, „International Journal of Social, Management, Economics and Business Engineering”, 2014, 8, (5), p. 1210–1216.

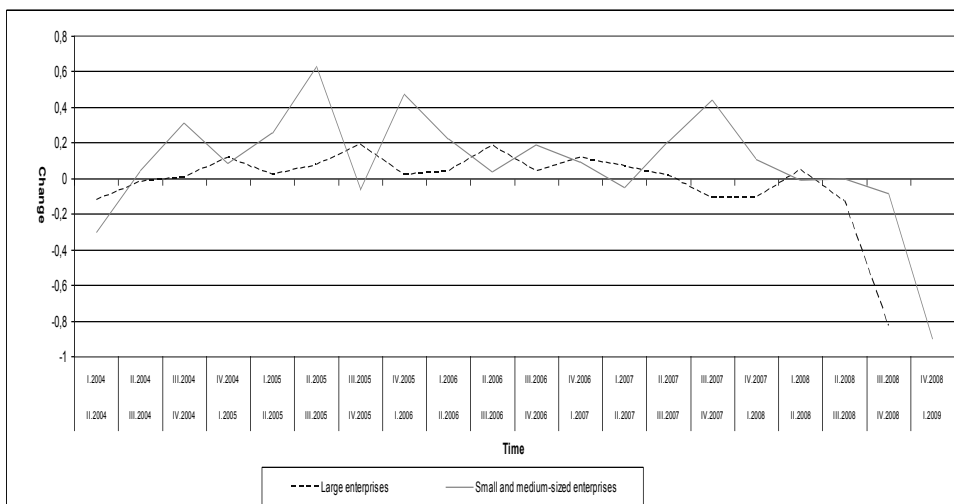
⁸ M. Woźniak, *System wspierania małych i średnich przedsiębiorstw*, Wydawnictwa AGH, Kraków 2012, pp. 91–96.

Changes in access to short-term credits

Figure 1 presents the criteria for granting short-term credits to enterprises in 2004–2009. This type of credit is used for financing mainly the current functioning of the enterprise. There were big disparities between large enterprises and small and medium-sized enterprises in this time. Commercial banks decided to increase the criteria much more for SME than for LE from 2004 to the second quarter of 2006 and in 2007. The data is the next confirmation of credit discrimination thesis by J.K. Galbraith. There were but a few exemptions: the fourth quarter of 2004, the third quarter of 2005, from second quarter of 2006 to the first quarter of 2007 and the first quarter of 2008. In these periods of time commercial banks was taking completely different policy towards SME. Banks were easing the criteria for granting short-term credits for one these enterprises and tightened for LE in the same time. That raises the question about the explanation of these decisions. The reason could be that banks wanted to balance their credit portfolio between LE and SME. Interesting fact is that just after the beginning of the global economic crises but before it came to Poland, banks decided to significantly decrease the criteria for short-term credits. It took place in the second quarter of 2008 for large enterprises and during the second half of 2008 for SME.

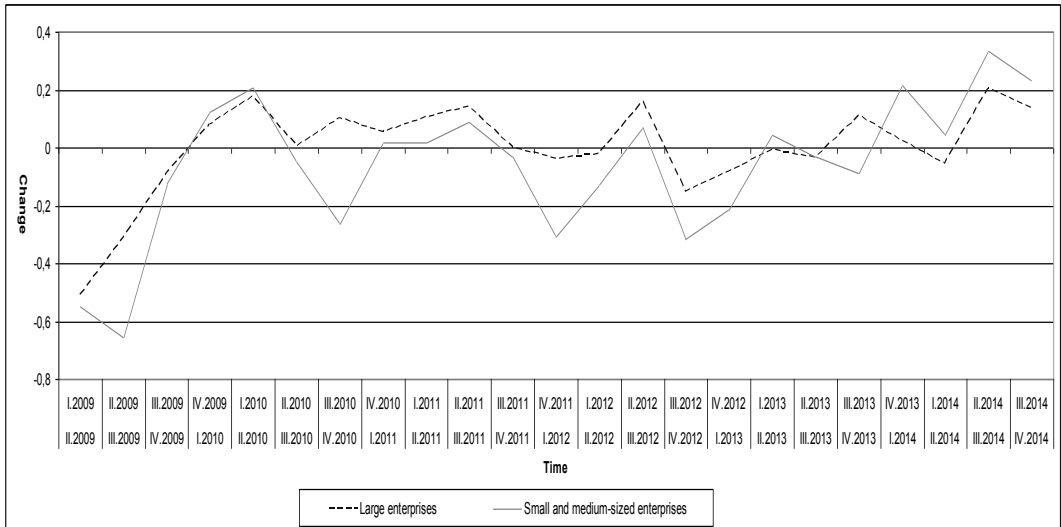
Figure 2 presents the criteria for granting short-term credits to enterprises from 2009, when the global economic crises started in Poland to the end of 2014. The criteria were significantly increased for all types of companies in 2009. It means the change of attitude of commercial banks to enterprises. First of all, banks started to treat SME and LE in the same way. When banks decided to increase of decrease the criteria for short-term credit, it concerned not only small and medium-sized enterprises like during the years 2004–2008. There were but two exemptions: from the second quarter of 2010 to the end of the year and in the third quarter of 2013. The criteria were risen for LE but were decreased for SME. Second, banks started to be even more restricted for large companies. When they decided to increase the criteria for granting short-term credits, it concerned more LE than SME. On the contrary, when banks were decreasing the criteria, it concerned more small and medium-sized enterprises. That situation was completely different from the policy of commercial banks before the economic crises. It could be coupled with the fact that banks sought to find the new sources of income while large enterprises had many financial problems. SME became more interesting customer under these circumstances.

Figure 1. Criteria for granting short-term credits to enterprises in Poland in 2004–2009



Source: own estimations based on NBP survey, www.nbp.pl (17.12.2014).

Figure 2. Criteria for granting short-term credits to enterprises in Poland in 2009–2014



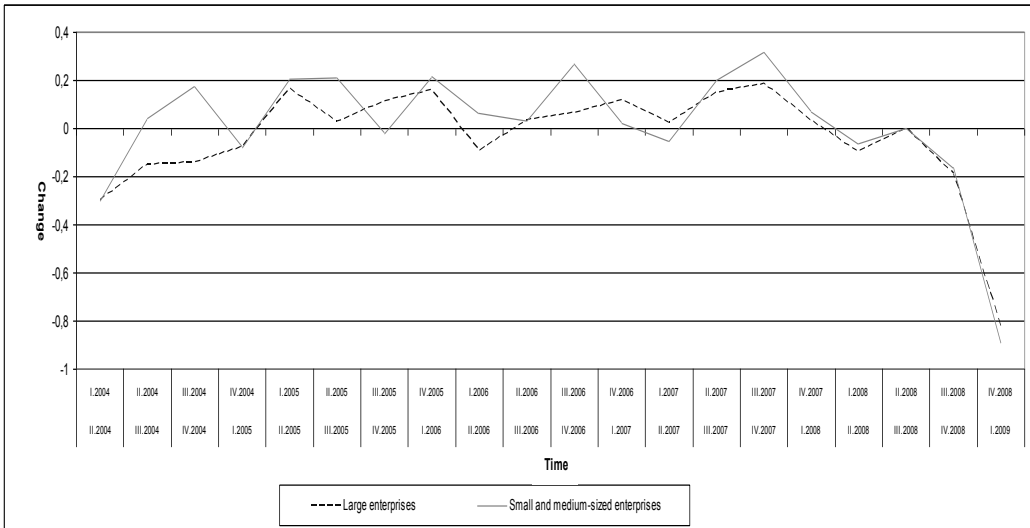
Source: own estimations based on NBP survey, www.nbp.pl (17.12.2014).

Changes in access to long-term credits

The criteria for granting long-term credits to enterprises in 2004–2009 were presented in the figure 3. This type of credit is used for financing new investments in companies. Commercial banks in Poland were more restricted for SME than for LE during the period of time. Banks increased the criteria far more for small and medium-sized enterprises and the only exemptions were in the third quarter of 2005 and the first six months of 2007. It also confirms the credit discrimination thesis by J.K. Galbraith. It means that Polish SME had to fulfill more restricted criteria than LE. When banks decided to decrease the requirements for obtaining long-term credits, it concerns more large companies. There was but interesting change of this situation from the second quarter of 2008 just after the economic crises in Poland. Commercial banks decided to dramatically decrease the criteria both for SME and LE in the same time. It was similar to situation on the short-term credit market in the same time.

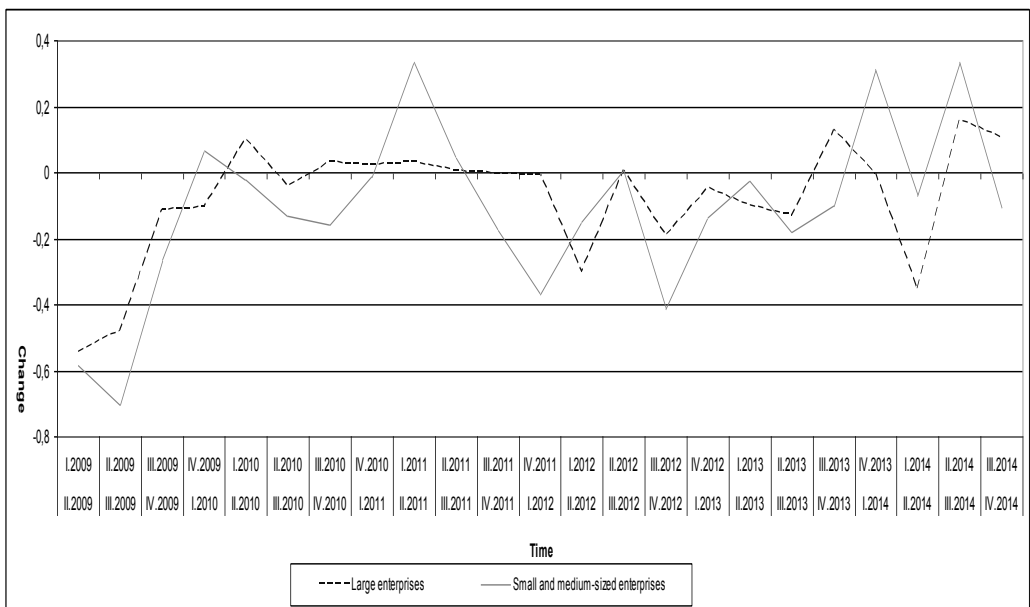
The criteria for long-term credits were increased from the beginning of 2009 for large enterprises and from the second quarter of 2009 for SME. Commercial banks decided but to ease the criteria for small and medium-sized companies during the next year – 2010. It was in opposite to LE which had to fulfill the same requirements in 2010–2011. In the first half of 2011 the significant increase of criteria for long-term credits for SME was observed. However it was hard to determine which group of enterprises was favored by banks during the years 2009–2013. Nevertheless, there were more changes of the criteria for SME and in 2014 these enterprises had to face much harder requirements to grant a credit than LE.

Figure 3. Criteria for granting long-term credits to enterprises in Poland in 2004–2009



Source: own estimations based on NBP survey, www.nbp.pl, (17.12.2014).

Figure 4. Criteria for granting long-term credits to enterprises in Poland in 2009–2014



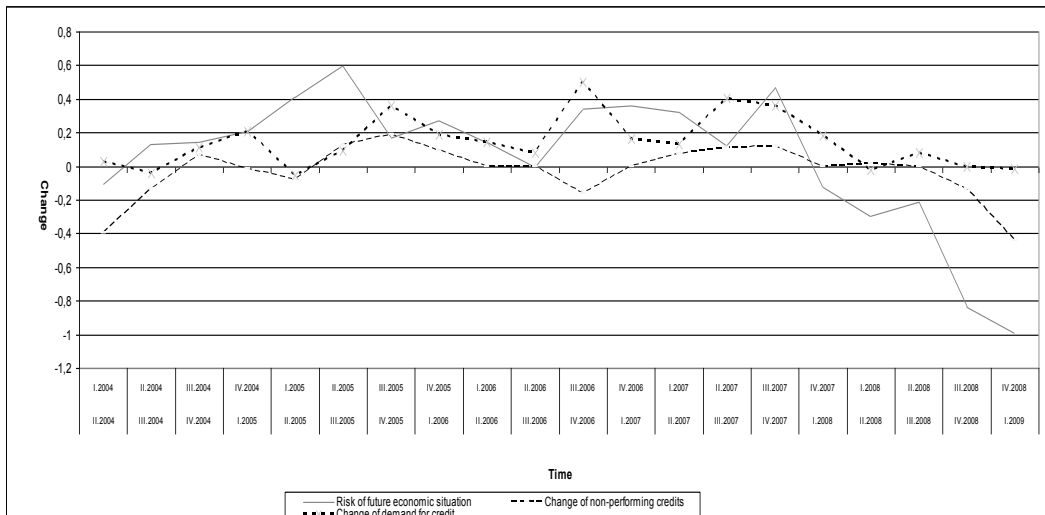
Source: own estimations based on NBP survey, www.nbp.pl, (17.12.2014).

Reasons of changes in access to credits

Reasons of changes in credit policy in 2004–2008 are presented in figure 5. The importance of risk of future economic situation was rising from the beginning of 2004 to mid-2005 whereas influence of the demand for credit was delivering in the first half of 2004 and in the first quarter of 2005. Opposite situation took place in the third quarter of 2005 and in the second quarter of 2007. The banks decided that future economic situations was LE and LE risky in 2008 when the global economic started in the USA. That raises a question why they were not afraid of coming crises to Poland. In the same time the importance of non-performing credits was decreasing too. The effect was the drop of criteria for granting either short-term or long-short credits for the enterprises what was presented in the previous part of the paper. Nevertheless there was no change of demand for credit in the same time. The reason could be that the companies were more afraid of future economic situation than commercial banks.

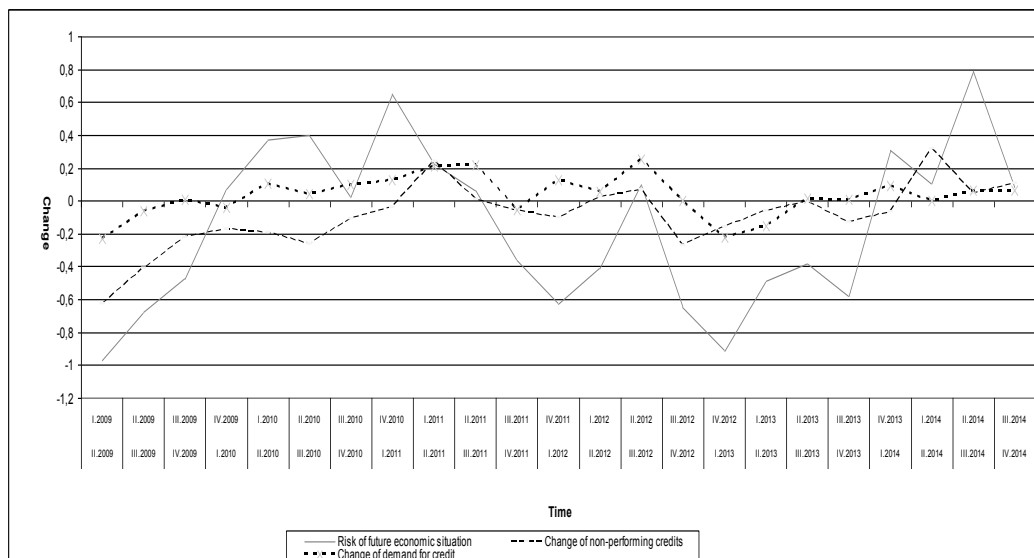
The demand for credit had been increasing from the beginning of 2009 to mid-2011 – see figure 6. Nevertheless, the importance of risk of future economic situation on changes of credit policy was rising ever more in the same period of time. The same situation concerned to the changes of non-performing credits what was probably connected with the start of economic crises in Poland. Since the second part of 2011 Polish banks decided that the future economic perspectives were LE and LE risky what decreased the influence of that factor on the credit market. On the other hand the demand for credit became more and more important factor. However, the change of future economic situation subjected much fluctuation in the analyzed period of time, rising dramatically from the fourth quarter of 2012 to the second quarter of 2014. Interesting fact is that this came along with the slow but stable increase of importance of the other factors: the demand for credit and non-performing credits.

Figure 5. Reasons of changes in credit policy in Poland in 2004–2008



Source: own estimations based on NBP survey, www.nbp.pl (17.12.2014).

Figure 6. Reasons of changes in credit policy in Poland in 2009–2014



Source: own estimations based on NBP survey, www.nbp.pl (17.12.2014).

Conclusion

After the analysis the following conclusions regarding access of enterprises to bank credits in Poland can be presented:

1. Banks were more restricted to SME which wanted to obtain short-term or long term credits than for LE from 2004 to 2008. This is the next confirmation of the credit discrimination thesis by J.K. Galbraith.
2. Banks decided to ease the criteria for short-term credits for SME and tighten their policy to LE after the start of the economic crises in 2009. The similar situation was but not observed on the long-term credit market.
3. There was decrease of importance of future economic situation and non-performing credits as the reasons of credit policy in 2008, just before the start of the economic crises. After that, banks significantly increase the influence of those factors up to mid-2011.

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Katarzyna Łach
Cracow University of Economics, Poland

SOURCES OF FINANCING MICRO-ENTERPRISES IN POLAND DURING THE CRISIS*

Summary

In the majority of papers concerning the influence and consequences of a financial and economic crisis in the sector of enterprises, we can come across an opinion that one of the first impulses of a crisis is the limitation of possibilities for firms to acquire capitals and the reduction of their accessibility. Uncertainty on financial markets and in banks makes it more difficult to raise external finance, a bank credit in particular. The smallest business entities operating on the market (micro-enterprises) can be particularly exposed to the lower accessibility of capitals due to usually worse credit score. The research objective of this paper is to identify and analyse the effect of the financial and economic crisis on the financing of firms in Poland, with special consideration of the situation of micro-enterprises.

The empirical material used in the research comes from Amadeus database from over 3.5 thousand micro-enterprises.. The research period included the years 2006–2012. The analysis of the debt level is not univocal, but it is possible to observe some degree of financing with liabilities in the years 2009–10, which can be related to the crisis. The share of long-term bank credits increased in the years 2008–2009. The significance of short-term credits in financing micro-enterprises grew systematically in the studied years. The scope of financing micro-firms with a trade credit decreased in the years 2008–2009. The influence of the financial crisis and the economic slowdown is most visible in the study of the possibilities to finance firms from financial surplus, that was decreasing all the time starting from 2008.

Examining the effect of the crisis on the structure of the sources of financing firms is difficult. Changes in the calculated ratios do not enable univocal conclusions. However, we may suppose that the observed fluctuations, even insignificant ones, are a reaction of business entities to the crisis.

* * *

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Introduction

In the majority of papers concerning the influence and consequences of a financial and economic crisis in the sector of enterprises, we can come across an opinion that one of the first impulses of a crisis is the limitation of possibilities for firms to acquire capitals and the reduction of their accessibility. Uncertainty on financial markets and in banks makes it more difficult to raise external finance, a bank credit in particular.

The smallest business entities operating on the market (micro-enterprises) can be particularly exposed to the lower accessibility of capitals due to usually worse credit score. A narrow scope of activities, smaller assets which can be a credit collateral are the reason for which micro-enterprises are considered more risky by financial institutions. What is of additional significance here is a conservative financial strategy most often conducted by those entities, primarily based on internal sources, and low awareness of the owners (managers) of alternative sources of finance.

Another symptom of a fall of the economic situation in businesses is a decrease in the demand for goods or services sold, which is manifested by declining production, sales, and leads to the worsening of the financial situation, primarily in the area of profitability and financial liquidity. Such a situation also results in payment gridlocks accumulating in the enterprise sector, leading to an increase in debt of business entities.

The research objective of this paper is to identify and analyse the effect of the financial and economic crisis on the financing of firms in Poland, with special consideration of the situation of micro-enterprises. The paper verifies the above theses in order to recognise whether in Polish businesses, in consequence of the crisis which conventionally began in 2008, actual changes in the financing structure took place.

The research sample and the applied research methodology

The empirical material used in the research comes from Amadeus database. The base includes information from financial statements of firms operating in 43 European countries. The financial data come mostly from national statistical offices (in Poland it is the Central Statistical Office).

The research period included the years 2006–2012. The information was obtained from over 3.5 thousand micro-enterprises. However, due to the occurring shortages of data in individual years, the research sample included in the calculation of selected ratios is different in subsequent analysed periods. The studied micro-enterprises were isolated from the totality of entities on the basis of the value of sales revenues and the size of employment from 2009. In this group there are entities whose annual sales revenues did not exceed 2 million Euros² and the size of employment was lower than 10 people.

There are numerous financial ratios illustrating the equity structure of a firm. The most synthetic measure is the debt ratio. According to the assumptions presented in the Introduction, one of the goals of the conducted research was to check whether debt in firms increased, which is a characteristic feature of the time of a crisis.

The conducted analysis of scientific papers and reports on the effect of the crisis on the economic situation of businesses leads to a conclusion that one of the first symptoms of a crisis, particularly a financial one, is smaller availability of bank credits³. Such a fact should be reflected in a smaller scope

² To simplify, the rate: 1 Euro = PLN 4.00 was adopted.

³ M. Cymek, *Stan finansowania działalności przedsiębiorstw w okresie kryzysu*, Gazeta Finansowa Online, Date of publication: 9 January 2012, <http://www.gf24.pl/5863/stan-finansowania-dzialalnosci-przedsiębiorstw-w-okresie-kryzysu>, L. Kaliszczak, L. Urban, *Zachowania małych i średnich przedsiębiorstw w warunkach spowolnienia gospodarczego w Polsce*, in: *Nierówności społeczne a wzrost gospodarczy. Uwarunkowania sprawnego działania w przedsiębiorstwie i regionie*, University of Rzeszów, Bulletin No. 20, Rzeszów 2011, pp. 187–201, *Kryzys finansowy*.

of financing businesses with a credit, and smaller percentage of firms using this source of finance. Therefore, for a more detailed analysis of the structure of the sources of financing micro-enterprises, changes in the debt under banks credits were analysed, too.

What was also analysed was the scope of using trade credits (trade liabilities) to check whether we can really talk about increasing payment gridlocks in firms. Possible growth of financing with trade liabilities can be also an effect of insufficient access to bank credits and loans. In such a situation businesses could in a way force longer terms of payments from suppliers, treating a trade credit as a substitute of a bank credit⁴.

A symptom of the worsening economic situation of firms during a crisis is also lower profitability reducing the possibilities to finance activities from retained earnings. In order to examine the scope of so-called self-financing of firms, the relation of financial surplus to total assets was examined.

Finally, the following relations were calculated and analysed in the research:

- debt level, measured by the relation of the sum of liabilities and provisions for liabilities to total assets,
- long-term bank credits to total assets,
- short-term bank credits to total assets,
- trade liabilities to total assets, and
- financial surplus (net profit + amortisation) to total assets

An analysis of the structure of financing micro-enterprises in the years 2006–2012

Debt ratio analysis

The first analysed ratio indicating the equity structure of firms is debt ratio. Table 1 includes the data about mean values⁵ and deciles of this ratio. Table 2 is the presentation of the structure of micro-enterprises with regard to the maintained level of debt. Each table is followed by the graph presenting the most important information from the above tables (Figures 1 and 2).

Wybrane zagadnienia, Bureau of Research, Wydawnictwo Sejmowe, Warszawa 2009, R. Antczak, M. Starczewska-Krzysztożek, *Monitoring kondycji sektora dużych przedsiębiorstw 2009*, PKPP Lewiatan i Deloitte, Warszawa 2009, *Indeks Biznesu*, PKPP Lewiatan, Warszawa, August 2009 – March 2011, *Strategie funkcjonowania i procesy inwestycyjne przedsiębiorstw w sytuacji znaczącego pogorszenia się koniunktury w gospodarce lub konkretnych branżach*, The Knowledge and Innovation Institute, Warszawa, September 2009.

⁴ J. Marzec, M. Pawłowska, *Racjonowanie kredytów a substytucja między kredytem kupieckim i bankowym – badania na przykładzie polskich przedsiębiorstw*, Materiały i Studia, Bulletin No. 261, The National Bank of Poland, Warszawa 2011.

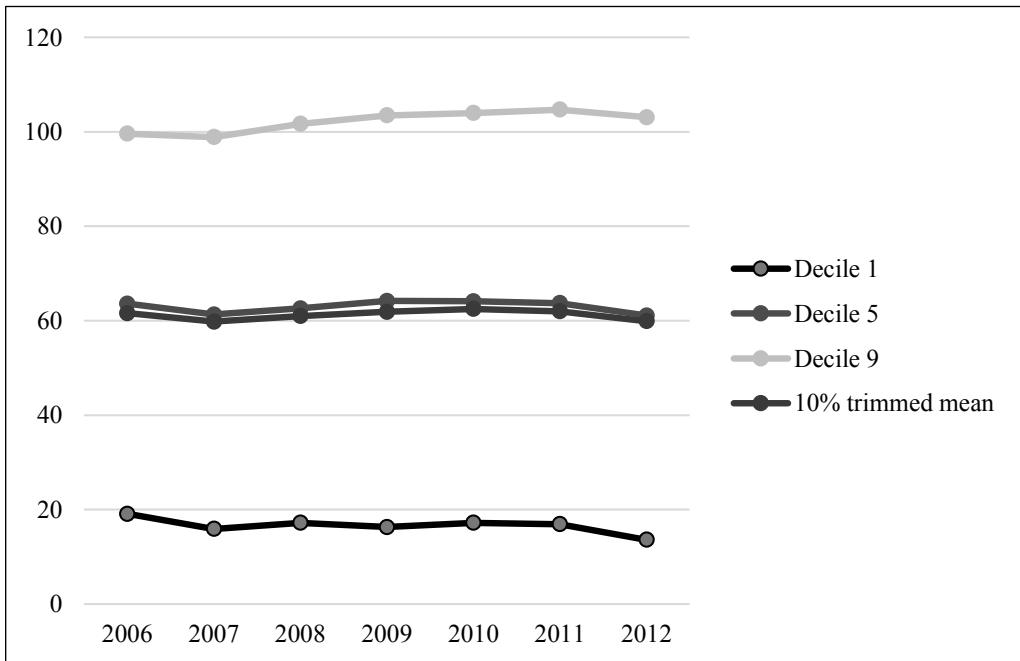
⁵ The calculated truncated mean is the arithmetic mean excluding 10% of the results from their upper and bottom extreme (5% of the highest values and 5% of the lowest values). The author decided to use the above measure due to high probability of the occurrence of errors in the obtained financial data in some, those extreme and atypical, examples.

Table 1. The statistics of debt ratio in micro-enterprises

Specification	2006	2007	2008	2009	2010	2011	2012
Decile 1	19.1	15.9	17.2	16.3	17.2	16.9	13.6
Decile 2	32.1	32.6	31.8	29.9	31.6	30.7	28.6
Decile 3	44.1	43.5	42.6	43.0	43.8	42.7	40.7
Decile 4	54.1	52.3	53.0	53.9	54.0	53.1	51.3
Decile 5	63.6	61.3	62.6	64.2	64.1	63.7	61.1
Decile 6	71.5	69.4	71.1	72.5	73.1	72.6	69.8
Decile 7	80.3	77.9	79.6	81.2	81.5	81.0	78.6
Decile 8	88.5	86.1	88.9	90.9	90.9	90.0	87.7
Decile 9	99.6	98.9	101.7	103.5	104.0	104.7	103.1
10% trimmed mean	61.6	59.8	61.0	61.9	62.5	62.0	59.9
Number of companies	1,675	2,318	3,119	3,930	3,750	3,405	2,740

Source: author's own research based on the data from Amadeus database.

Figure 1. The shaping of selected statistics of debt ratio in micro-enterprises



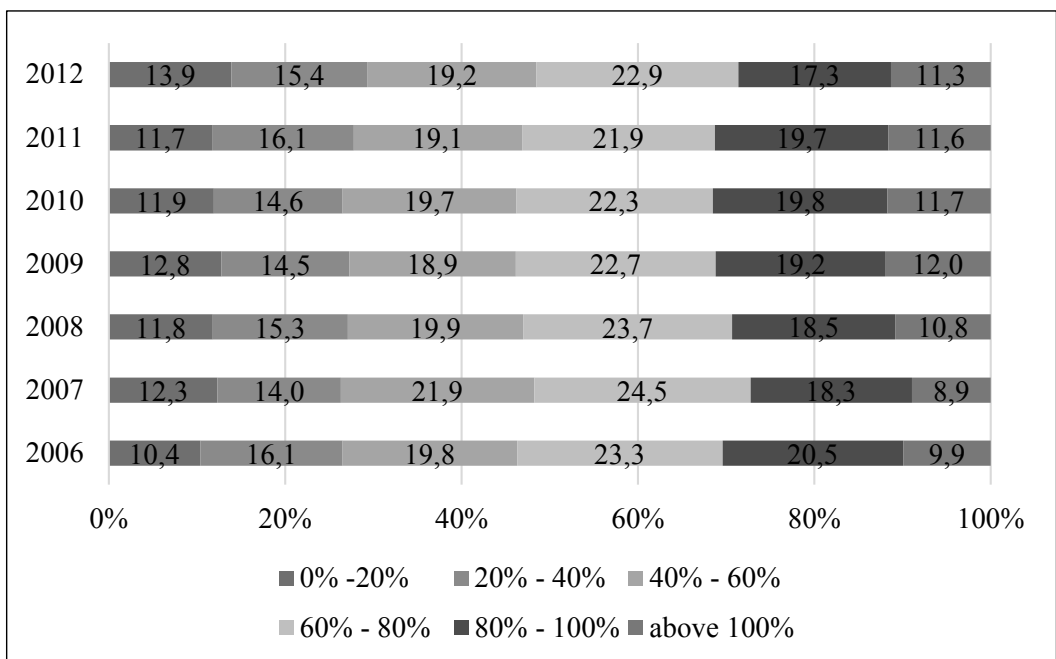
Source: author's own research based on the data from Table 1.

Table 2. The structure of micro-enterprises with regard to the level of debt ratio (%)

The ratio value ranges (%)	2006	2007	2008	2009	2010	2011	2012
0% – 20%	10.4	12.3	11.8	12.8	11.9	11.7	13.9
20% – 40%	16.1	14.0	15.3	14.5	14.6	16.1	15.4
40% – 60%	19.8	21.9	19.9	18.9	19.7	19.1	19.2
60% – 80%	23.3	24.5	23.7	22.7	22.3	21.9	22.9
80% – 100%	20.5	18.3	18.5	19.2	19.8	19.7	17.3
above 100%	9.9	8.9	10.8	12.0	11.7	11.6	11.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: author's own research based on the data from Amadeus database.

Figure 2. The structure of micro-enterprises with regard to the level of debt ratio (%)



Source: author's own research based on the data from Table 2.

The mean level of debt of micro-enterprises was about 60%. The ratio median was minimally higher but characterised by a similar trend. When analysing the trends of the mean and the median, we can observe that in the years 2008–2009 the growth of debt occurred, whereas in more recent years (2011–2012) there was a drop below the level before the crisis (in comparison with 2006).

It is characteristic that the value of low deciles (deciles 1–4), namely the ones concerning firms with lower debt, declined in the analysed period, whereas decile 9 rose by a few percentage points. On that basis we can conclude that businesses in a generally better condition actually improved it (lowered the debt), and the situation of most indebted firms became even worse. We can come to similar conclusions when analysing the data presented in Table 2 and Figure 2. Although the values of other ranges did not change distinctly, the percentage of micro-enterprises with the lowest debt (0 – 20%) and the highest debt (over 100%) went up. The share of micro-firms with high debt but still not exceeding 100 % (80 – 100%) dropped by around 3 percentage points. The most numerous group of micro-enterprises was the one which gathers firms with debt from 60 – 80%.

From 2008, the percentage of firms indebted in more than 100% increased to over 10%. That means that from that year over 10% of businesses had negative equities, which in the economic sense signals the bankruptcy of a business. It is also symptomatic that the share of such micro-firms rose distinctly in 2009, which was the date of the beginning of the economic crisis.

An analysis of the level of the use of bank credits

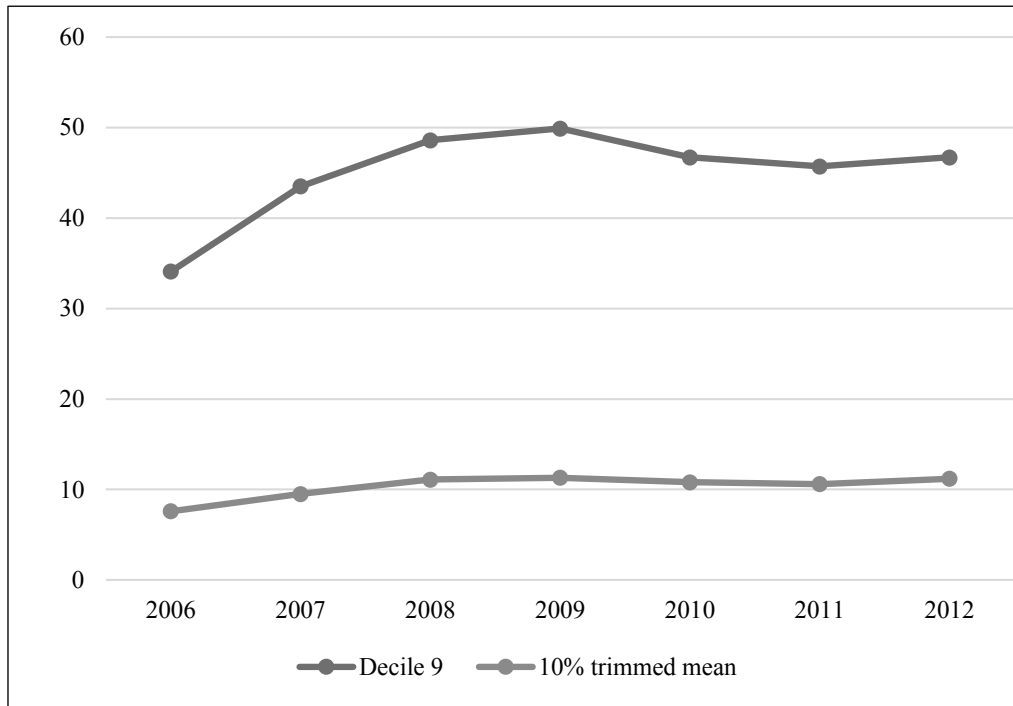
Another studied ratio describing the structure of financing micro-enterprises is the share of long-term bank credits. This ratio statistics were calculated and gathered, and the structure of the studied businesses with regard to its level was presented. The data can be found in the following tables (Table 3 and 4) and on graphs (Figure 3 and 4).

Table 3. The statistics of long-term bank credit share ratio in financing micro-enterprises (%)

Specification	2006	2007	2008	2009	2010	2011	2012
Decile 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 5	0.0	0.0	1.1	0.6	0.8	1.5	1.8
Decile 6	3.4	5.3	6.1	5.9	6.2	6.6	7.0
Decile 7	9.8	11.4	14.1	14.4	14.3	13.4	14.9
Decile 8	17.7	23.8	27.2	27.5	25.3	24.5	27.1
Decile 9	34.1	43.5	48.6	49.9	46.7	45.7	46.7
10% trimmed mean	7.6	9.5	11.1	11.3	10.8	10.6	11.2
Number of companies	911	1,329	1,888	2,391	2,353	2,148	1,724

Source: author's own research based on the data from Amadeus database.

Figure 3. The shaping of selected statistics of long-term bank credit share ratio in financing micro-enterprises (%)



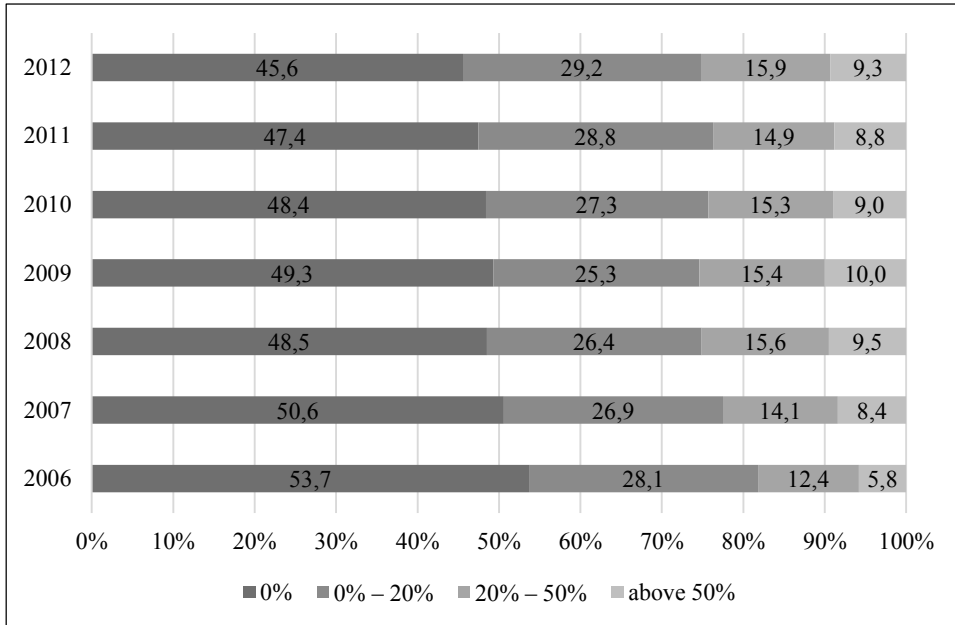
Source: author's own research based on the data from Table 3.

Table 4. The structure of micro-enterprises with regard to the level of long-term bank credit share ratio in financing (%)

The ratio value ranges (%)	2006	2007	2008	2009	2010	2011	2012
0%	53.7	50.6	48.5	49.3	48.4	47.4	45.6
0% – 20%	28.1	26.9	26.4	25.3	27.3	28.8	29.2
20% – 50%	12.4	14.1	15.6	15.4	15.3	14.9	15.9
above 50%	5.8	8.4	9.5	10.0	9.0	8.8	9.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: author's own research based on the data from Amadeus database.

Figure 4. The structure of micro-enterprises with regard to the level of long-term bank credit share ratio in financing (%)



Source: author's own research based on the data from Table 4.

Until 2009, an average share of long-term credits was increasing. Particularly dynamic growth took place in the years 2007–2008. Then, in the years 2010–2011 the ratio went down minimally to increase again in the last year, 2012. The lowest mean share of long-term bank credits took place in 2006, it was 7.6%, the highest – in 2009 – 11.3%. The middle value of the examined ratio was much lower, it did not exceed 2%, and it had the highest value, 1.8%, in the last analysed period, the year 2012. What is characteristic is that the years 2009–2010 brought noticeable reduction of the ratio median, which we do not observe for the middle value.

Around a half of micro-enterprises did not use long-term credits; however, the percentage of such firms declined in all the years, except for 2009, which can be regarded the impact of the crisis on the financial markets.

The share of micro-firms with a positive but low share of long-term credits (0–20%) was going down till 2009, and then it rose successively, and in 2012 it exceeded the level from the beginning of the analysed period. The percentage of businesses with medium and high share of long-term credits (20–50% and above 50%) increased distinctly in 2007 and 2008, and then stayed on a similar level. On average, in the case of 15% of the examined micro-firms the debt under long-term credits was in the range 20–50%, and about 10% of the firms were indebted under the discussed credits in over 50%.

As in the debt ratio analysis, also here we can observe an increase in the share of firms with high (over 50%) level of financing with long-term credits (the highest share in 2009). However, the percentage of firms not indebted under long-term credits shapes differently. In the whole analysed period (with the exception of 2009), it falls.

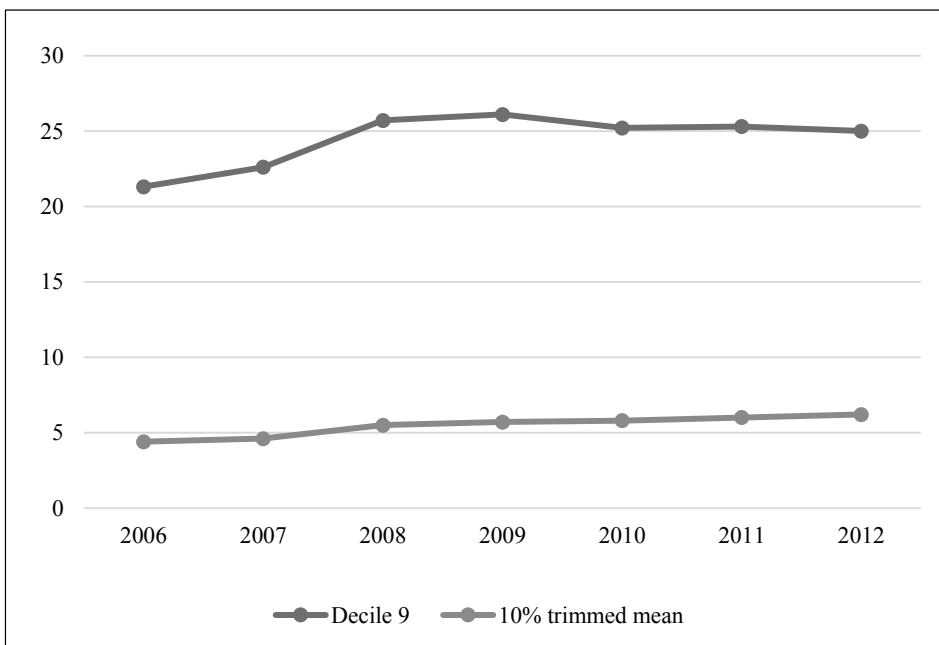
Then, the scope of the use of short-term bank credits by micro-enterprises was assessed. Appropriate values were calculated, and the data were shown in the following tables and on graphs (Table 5 and 6, Figure 5 and 6).

Table 5. The statistics of short-term bank credit share ratio in financing micro-enterprises (%)

Specification	2006	2007	2008	2009	2010	2011	2012
Decile 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Decile 5	0.0	0.0	0.0	0.0	0.0	0.1	0.8
Decile 6	0.4	0.0	1.6	2.4	3.3	4.2	4.4
Decile 7	5.0	4.9	6.6	7.4	8.2	8.5	9.0
Decile 8	11.3	11.4	14.0	14.1	14.3	14.7	15.1
Decile 9	21.3	22.6	25.7	26.1	25.2	25.3	25.0
10% trimmed mean	4.4	4.6	5.5	5.7	5.8	6.0	6.2
Number of companies	1,571	2,179	2,845	3,463	3,320	3,041	2,451

Source: author's own research based on the data from Amadeus database.

Figure 5. The shaping of selected statistics of short-term bank credit share ratio in financing micro-enterprises (%)



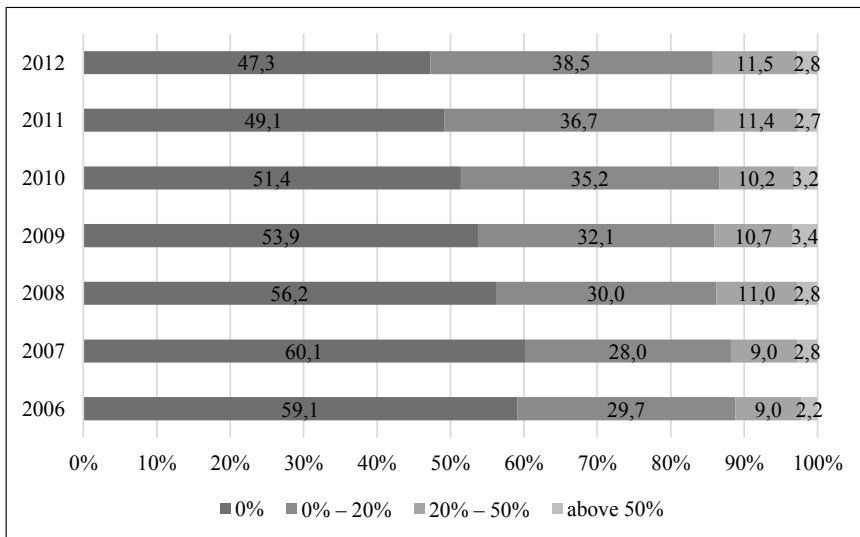
Source: author's own research based on the data from Table 5.

Table 6. The structure of micro–enterprises with regard to the level of short–term bank credit ratio (%)

The ratio value ranges (%)	2006	2007	2008	2009	2010	2011	2012
0%	59.1	60.1	56.2	53.9	51.4	49.1	47.3
0% – 20%	29.7	28.0	30.0	32.1	35.2	36.7	38.5
20% – 50%	9.0	9.0	11.0	10.7	10.2	11.4	11.5
above 50%	2.2	2.8	2.8	3.4	3.2	2.7	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: author’s own research based on the data from Amadeus database.

Figure 6. The structure of micro–enterprises with regard to the level of short–term bank credit ratio (%)



Source: author’s own research based on the data from Table 6.

A mean share of short–term bank credits in financing micro–enterprises is growing steadily. An exception was the year 2008, when the mean value of the assessed ratio increased more strongly, by almost 1 percentage point. An average scale of financing with working capital credits fluctuated from 4.4% in 2006 to 6.2% in 2012.

The ratio median was 0% in the majority of the years, in 2011 and 2012 it went up, finally to the level of 0.8%. It means that over a half of the examined micro–enterprises (till 2010) did not use short–term credits to finance their activities.

Around one–third of businesses financed maximally 20% of their assets with working capital credits. In about 10% of micro–firms the debt was in the range from 20–50%, and in about 3% it exceeded 50%. All the mentioned groups of firms which generally used short–term credits increased (their percentage rose).

To sum up, we can claim that the significance of bank credits in financing micro–enterprises increased in the analysed years, which contradicts the thesis about smaller availability of those capitals because of the crisis.

An analysis of the significance of trade credits in financing

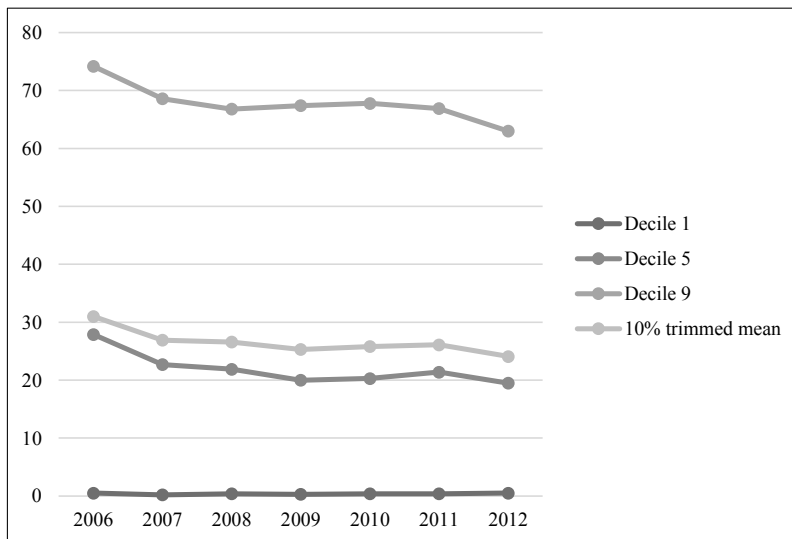
The most important non-banking sources of financing firms include trade credits whose significance in financing micro-firms was also assessed. The results of the obtained calculations were gathered in Tables 7 and 8, and on graphs (Figure 7 and 8).

Table 7. The statistics of trade liabilities share ratio in financing micro-enterprises (%)

Specification	2006	2007	2008	2009	2010	2011	2012
Decile 1	0.5	0.2	0.4	0.3	0.4	0.4	0.5
Decile 2	3.8	2.7	3.0	2.3	2.6	2.9	2.8
Decile 3	11.1	7.5	8.2	6.4	7.2	7.4	7.0
Decile 4	19.6	13.7	14.9	12.2	13.2	14.0	13.0
Decile 5	27.9	22.7	21.9	20.0	20.3	21.4	19.5
Decile 6	36.4	31.7	29.9	28.4	29.2	29.4	27.3
Decile 7	46.5	41.4	40.7	38.5	39.0	39.6	35.7
Decile 8	58.6	52.7	51.7	50.7	51.3	51.1	46.4
Decile 9	74.2	68.6	66.8	67.4	67.8	66.9	63.0
10% trimmed mean	31.0	26.9	26.6	25.3	25.8	26.1	24.1
Number of companies	1,843	2,556	3,474	4,349	4,129	3,749	3,047

Source: author's own research based on the data from Amadeus database.

Figure 7. The shaping of selected statistics of trade liabilities share ratio in financing micro-enterprises (%)



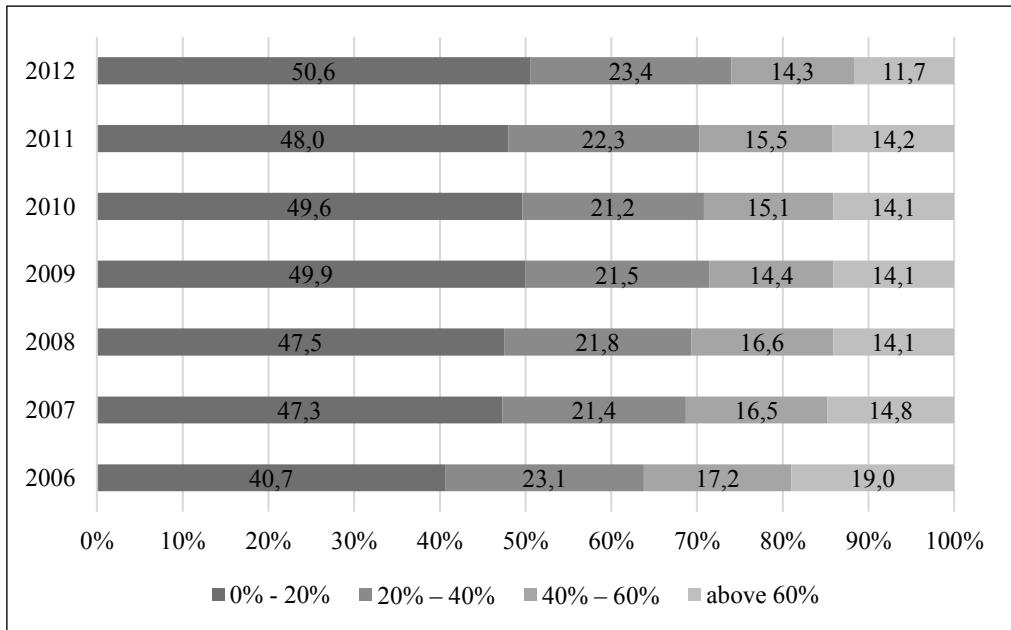
Source: author's own research based on the data from Table 7.

Table 8. The structure of micro-enterprises with regard to the level of trade liabilities share ratio (%)

The ratio value ranges (%)	2006	2007	2008	2009	2010	2011	2012
0% – 20%	40.7	47.3	47.5	49.9	49.6	48.0	50.6
20% – 40%	23.1	21.4	21.8	21.5	21.2	22.3	23.4
40% – 60%	17.2	16.5	16.6	14.4	15.1	15.5	14.3
above 60%	19.0	14.8	14.1	14.1	14.1	14.2	11.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: author's own research based on the data from Amadeus database.

Figure 8. The structure of micro-enterprises with regard to the level of trade liabilities share ratio (%)



Source: author's own research based on the basis of the data from Table 8.

The mean and the middle value of the share of trade liabilities in financing dropped in the analysed period. The drop was about by 7 percentage points for the mean and 8.5 percentage points for the median. On average, micro-enterprises financed a little over one – fourth of the assets with trade credits. The median of the examined ratio was lower by a few percentage points. In 10% of the firms the debt under trade liabilities did not exceed 0.5%.

The biggest group of the examined micro-enterprises were the ones whose discussed debt did not exceed 20%. Such firms constituted almost 50%. The share increased from about 40% in 2006 to around 51% in 2012. The second biggest group of micro-enterprises was the one in which financing with credits from suppliers was in the range 20 – 40%. The entities constituted about 22% of the totality of

the examined micro-firms and the percent did not change significantly. Similar percentage of micro-enterprises was characterised by the ratio of trade liabilities in the range from 40 – 60%, as in the case of 60%. Such firms constituted about 30% altogether. However, it should be emphasised that the number of such firms (with high debt with the recipients) decreased considerably.

An analysis of the ability to self-finance

The last examined ratio informing about the structure of financing firms is the ratio displaying the abilities to self-finance, being the relation of the sum of net profit and amortisation to total assets. Its value for individual micro-firms was calculated with the most important statistics and the data were gathered in the following tables and on graphs (Tables 9 and 10, Figures 1 and 10).

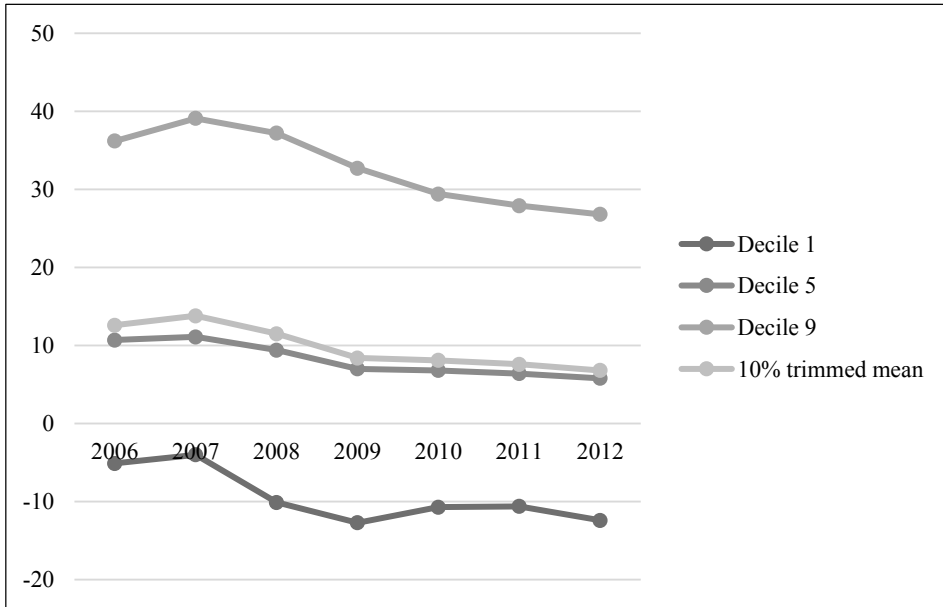
Table 9. The statistics of financial surplus share ratio in financing micro-enterprises (%)

Specification	2006	2007	2008	2009	2010	2011	2012
Decile 1	-5.1	-4.0	-10.1	-12.7	-10.7	-10.6	-12.4
Decile 2	1.6	2.2	-0.8	-1.8	-1.3	-1.6	-2.3
Decile 3	4.6	4.8	2.9	1.6	2.0	1.9	1.4
Decile 4	7.6	7.8	5.9	4.2	4.2	4.1	3.5
Decile 5	10.7	11.1	9.4	7.0	6.8	6.4	5.8
Decile 6	14.0	15.1	14.0	9.9	9.6	9.1	8.5
Decile 7	18.2	20.1	19.3	14.3	13.7	12.8	12.2
Decile 8	25.3	26.7	25.8	21.0	19.5	18.3	17.9
Decile 9	36.2	39.1	37.2	32.7	29.4	27.9	26.8
10% trimmed mean	12.6	13.8	11.5	8.4	8.1	7.6	6.8
The number of companies	1,539	2,109	2,845	3,507	3,353	3,072	2,520

Source: author's own research based on the data from Amadeus database.

The possibilities to finance micro-enterprises from profits generated on an ongoing basis decreased in the analysed period. After 2007, when the ratio went up in comparison with the previous year, there was a drop in all the remaining years. There is a double difference between the highest mean value and the middle value of the assessed ratio between the best year, 2007, and the worst year, 2012. The mean value of the financial surplus share was almost 14% in 2007 and less than 7% in 2012. The ratio median showed the trend which was very similar to the mean value but it was lower than the mean value by about 1–2 percentage point.

Figure 8. The shaping of the selected statistics of financial surplus share ratio in financing micro-enterprises (%)



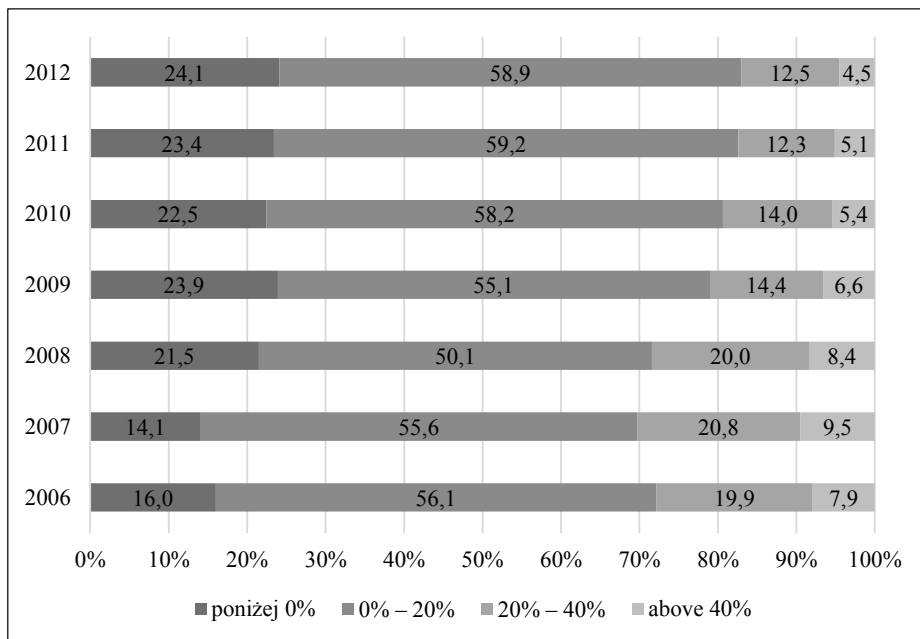
Source: author's own research based on the data from Table 9.

Table 10. The structure of micro-enterprises with regard to the level of financial surplus share ratio (%)

The ratio value ranges (%)	2006	2007	2008	2009	2010	2011	2012
below 0%	16.0	14.1	21.5	23.9	22.5	23.4	24.1
0% – 20%	56.1	55.6	50.1	55.1	58.2	59.2	58.9
20% – 40%	19.9	20.8	20.0	14.4	14.0	12.3	12.5
above 40%	7.9	9.5	8.4	6.6	5.4	5.1	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: author's own research based on the data from Amadeus database.

Figure 9. The structure of micro-enterprises with regard to the level of financial surplus share ratio (%)



Source: author's own research based on the data from Table 10.

In the examined years, the percentage of firms with negative “self-financing ratio” increased a lot. It concerns non-profitable businesses in which the amount of net loss exceeds the value of amortisation. The percentage of such firms went up from 16% in 2006 to over 24% in 2012. The percentage of micro-enterprises with the share of financial surplus in the range (0 – 20%) increased a little, thus, it improved. The number of such firms, after a decline in the years 2007 – 2008, increased and in the whole studied period, there was the biggest number of them, about 55% of all the studied micro-firms. The percentage of micro-firms with a higher share of financial surplus (20 – 50%) dropped almost two times when we compare the year 2012 and 2007. In 2007 such firms constituted 20%, and in 2012 only 12.5%. The share of enterprises with the biggest capabilities of self-financing (the ratio above 50%) also halved. Such firms constituted only 4.5% in 2012.

It should be noted that since 2008, the possibilities to use financial surplus to finance micro-enterprises has been considerably lower, which may be directly connected with the lowering of the profitability of firms and an increase in the number of unprofitable entities. Definitely, the above facts can be related to the turbulences and economic slowdown from the years 2008 and 2009.

Conclusion

An analysis of changes in the sources of financing enterprises within the period of a few years is a complicated and quite a difficult matter. It is particularly difficult to make a univocal and final diagnosis on the basis of such a study. Even if in the examined period a financial and economic crisis occurs. It should be emphasised that the issues of the structure of financing is difficult to change radically in a short time. Therefore, in spite of the occurrence of a marked economic downturn in the analysed years, it was not possible to expect big changes in the share of individual sources of financing business entities.

The following statements are a synthesis of the analyses presented in the paper:

1. The influence of the financial crisis and the economic slowdown is most visible in the study of the possibilities to finance firms from financial surplus. In all the applied statistics, a marked drop of the surplus share in financing micro-enterprises can be observed starting from 2008. The fact that till the end of the studied period no upward movement (change in the trend) can be seen is very pessimistic. In 2008, namely in the period regarded to be the beginning of the crisis, the percentage of firms with negative financial surplus grew rapidly (from 14.1% to 21.5%), whereas the number of businesses with average and high share of surplus in financing was decreasing all the time.
2. The analysis of the debt level is not univocal, but it is possible to observe some degree of financing with liabilities in the years 2009–10, which can be related to the crisis. However, it is difficult to indicate precise and definite reasons for that situation. On the one hand, an increase in debt can indicate the occurrence of financial problems in firms, on the other hand, however, it contradicts the thesis about the smaller accessibility of external (including debt) capitals during the crisis.
3. The share of long-term bank credits increased in the years 2008–2009, namely in the years considered the crisis years, which is also in the conflict with the assumption about the difficulties in raising banking sources of finance. However, we may suppose that although the level of variable capitals can change over one year, in the case of constant capitals big changes are not possible in short time. Thus, it is difficult to expect a significant drop of long-term credits. Yet, the fact that the percentage of firm which did not use long-term credits in the whole studied period, except for 2009, dropped, is symptomatic.
4. The significance of short-term credits in financing micro-enterprises grew systematically in the studied years. No signal triggered by the beginning of the financial crisis was observed, which can be a proof of the non-occurrence of a decrease in the access to a bank credit.
5. The scope of financing micro-firms with a trade credit decreased in the years 2008–2009. In that period, the share of firms with a small share (to 20%) of liabilities towards suppliers in financing went up, whereas the percentage of entities with medium and large debt increased.

In numerous research into the sources of financing firms belonging to the Small and Medium-Sized Enterprise (SME) sector, the limited knowledge of managers of such firms about the potential sources of finance is pointed out. The results of the surveys prove the existence of a considerable distance of entrepreneurs to the use of credits or subsidies. Taking credits is associated with financial problems of the firm, and not with taking opportunities⁶. A manifestation of such an approach are data indicating that the majority of Polish businesses (micro-enterprises included) do not use bank credits at all. Thus, the credit channel of the transmission of the crisis to the real sphere, emphasised in the literature (the channel connected with the credit activities of banks, the financial accelerator concept)⁷ has limited possibilities of operation.

The smaller accessibility of bank credits will be only experienced by those firms which use them regularly, for example in the form of a working capital credit taken due to the seasonal character of activities. In the case of investment credits it should be noted that difficulties with taking them were experienced only by those businesses which applied for them at that time. However, there are fewer firms like that during the crisis. Owing to the uncertainty, economic slowdown and, what follows, smaller demand, few enterprises decide to develop.

The above syntheses and observations prove that examining the effect of the crisis on the structure of the sources of financing firms is difficult. Changes in the calculated ratios do not enable univocal conclusions. However, we may suppose that the observed fluctuations, even insignificant ones, are a reaction of business entities to the crisis.

⁶ W. Orłowski, R. Pasternak, K. Flaht, D. Szubert, *Procesy inwestycyjne i strategie przedsiębiorstw w czasach kryzysu*, Polish Agency for Enterprise Development, Warszawa 2010.

⁷ K. Mitrega-Niestrój, *Kanały transmisji kryzysu finansowego na sferę realną na przykładzie kryzysu subprime*, Annales Universitatis Mariae Curie-Skłodowska, Sectio H, Oeconomia, Vol. 45 (2011), 2, pp. 27–35, Wyd. UMCS, Lublin 2011.

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Olga Shvets

SHEI „Banking University”, Ukraine

THEORETICAL ASPECTS OF CREDIT RISK CONTROL IN COMMERCIAL BANKS

Summary

In the paper the views of different authors on the concept of “credit risk control” are considered and its generalized definition is offered. The functions of the credit risk control are exposed, the principles and technology for effective implementation of credit risk control in a bank are identified.

* * *

Introduction

The current stage of development of the banking system in Ukraine provides grounds to state that the banks failed to make sufficient efforts aimed at bringing about effective control over the execution of credit transactions terms, this resulting in a significant increase in troubled assets. Without adequate regulation this trend can lead to still bigger destabilization of the banking sector of Ukraine. In this regard there is an urgent need to introduce measures to improve the efficiency of banking control over credit operations, which will facilitate effective organization of a credit process and reduce the share of bad loans.

The topicality of bank credit risk management is reflected in a number of publications of foreign scientists like E. Altman, J. Bessis, D. Duffy, P. Clark, T. Koch, D. Lando, P. Rose, E. Sanders, J.Cinci. A significant contribution to the theory and practice of bank credit risk management have been made by home scientists and practitioners, including: V.V. Vitlinskyi, N.P. Verhusha, V.Y. Vovk, G.T. Karcheva, Y.S. Nakonechnyi, A.V. Pernarivskyi, L.O. Prymostka, R.A. Slav'yuk, L.Y. Sloboda.

Highly appreciating the contribution of the researchers to elucidating the theoretical and methodological principles, and practical aspects of bank credit risk management however we have to note that at present there is a number of unresolved problems in this area that clearly outline volume of growing bad loans. This necessitates the reevaluation of theoretical and practical aspects of bank credit risk control.

Thus the purpose of this article is to deepen the understanding of the economic content of bank credit risk control, to identify the principles and technology of its effective implementation.

The main research material

Credit risk is dynamic because during the loan agreement period the credit risk level typically varies as it is affected by a number of factors of internal and external nature. Therefore, in order to identify adverse changes in the credit risk it is necessary to conduct systematic monitoring, which will allow to take timely appropriate management decisions to minimize it. The results of the monitoring are the information–analytical basis to justify the choice of methods to minimize the credit risk of a bank.

Considering the importance of control in the system of bank credit risk management we will analyze its nature and characteristics in more detail.

Based on the analysis of publications on credit risk management one can conclude that most scholars when analyzing the nature of this concept consider credit risk control as a function of management. In our opinion, while interpreting the concept “credit risk control” one should proceed with the structural and compositional interaction of the two components in its meaning – the term “control” and “credit risk”. First of all, consider the dialectical nature of the concept “control”. This term is derived from the French word *controle*, which means inspection or monitoring in order to check¹.

It should be noted that the term “control” is widely used both in economic and legal sciences, leading to ambiguity of its interpretation. The analysis of foreign and domestic special sources allows to systematize the existing approaches to defining the concept “control”: system of supervision; process; management function; platform for decision making.

F. Butynets, V. Cooper, N. Vygovska, N. Petrenko follow the first approach. They note that “control” implies “systematic monitoring and scrutiny of the way the corresponding object functions in order to determine its deviation from the set parameters”². In this respect, such scientists as O. Akyentyeva, S. Haliullina, G. Ryaboshapka offer a more detailed definition of control as “a system of monitoring and checking if the management object functions in accordance with the made managerial decisions, finding out the results of administrative influence on the managed object, identifying deviations made during the implementation of these decisions”³.

We agree with the fact that control is based on observing the behaviour of the managed system to ensure its optimal functioning (measuring the achieved results and their correlation with the expected ones), however we believe that its essence is not limited this way.

Singling out the approach to defining the essence of control as a process, as reflected in the works^{4, 5, 6, 7}, is based on the necessity to diagnose the state of the analyzed object on the basis of process data collection methods by pre–defined parameters. The process of control consists of developing standards, measuring actual progress and carrying out adjustments in the event when the achieved results differ significantly from established standards.

Interpreting control as a management function is identifying it as follows: control is a management function to ensure achieving the desired state of the object⁸. As we see this definition indicates that control is purposeful.

¹ *Dictionary of the Ukrainian language*, in 11 volumes, 1973, Vol. 4.

² F. Butynets, V. Bondar, N. Vyhovska, N. Petrenko, *Control and Audit*, PE “Ruta”, Zhytomir 2006.

³ Akyentyeva O., *Control as a Management Function*, http://www.rusnauka.com/12_KPSN_2009/Economics/44699.doc.htm.

⁴ A.G. Zahorodnyi, G.L. Voznyuk, *Financial and Economic Dictionary*, Publishing House of National Univ. “Lviv Polytechnic”, Lviv 2005.

⁵ L.P. Kulakovska, *Basics of Audit*, “Novyi Svit – 2000”, Lviv 2002.

⁶ L. Napadovska, *Internal Control in a Market Economy*, Nauka i Osvita, Dnipropetrovsk 2000.

⁷ B. Usach, *Control and Audit*, Znannia Press, Kyiv 2002.

⁸ L. Kartavykh, *Control as a Constituent in Managing the Financial System of a State*, “Economica Kryma”, 2008, Vol. № 22.

As far as on the basis of the control data the managed system is adapted, that is, optimal management decisions are made, the number of scientists, including J. Shemshuchenko⁹, V. Hizhevskyy¹⁰, follow the approach to determining the studied term as a platform for making decisions.

The carried out systematization of control definitions makes it possible to formulate a generalized definition: control is a special function of management, which implementation involves monitoring and scrutiny of the process of functioning and the actual state of the managed object, in order to determine the substantiation and effectiveness of the already made management decisions and the results of their implementation, identifying deviations from the requirements of these decisions, eliminating negative situations and informing the authorities. Thus, control is a type of management, whose task is quantitative and qualitative assessment of the performance.

Having studied the nature of control we will move to the concept “credit risk control”, keeping in mind that credit risk is the object of control.

As we have already noted, most scientists consider the essence of credit risk control as a management function. According to them, the function of control provides supervising and checking the compliance of the actual level of bank credit risk with the established standards; involves development of standards for monitoring in the form of quantitative indicators system that allow to check the efficiency of the implementation of developed plans or individual measures, to make timely changes facilitating the achievement of the set goal of the bank.

According to the management theory L. Sloboda considers credit risk control as one of the functions of credit risk management. In her opinion credit risk management is “the activity, which includes forecasting and planning of credit risk level according to the amounts and types of credit transactions, motivating effective organization of credit risk monitoring, exercised by credit risk department in the process of the bank’s lending activities, conducting analysis and evaluation of the factors causing credit risks and their impact on the performance of the banking institution, control over the level of credit risks and in the event of need their regulation in order to achieve strategic objectives and current tasks of the bank”¹¹. This definition suggests that credit risk control is relatively secluded area of management activities (individual processes in management), which provide management action.

According to N. Verhusha the essence of credit risk control lies “in the design of a signaling system of parameters deviations of bank credit risk positions to develop a set of measures for credit risk adjustment with daily feedback, connecting both horizontally and vertically all the levels of the mechanism for managing them”¹². As we can see, this definition focuses on the fact that an important part of control is feedback.

Given the above, one can single out two aspects of credit risk control:

1. control to check the compliance of the actual level of bank credit risk with the established standards;
2. control to take steps to adjust the existing deviations from the established norm.

In our opinion, the formation of a holistic understanding of the nature of credit risk control involves determining the general goal and the objectives for its implementation.

As A. Shepil states “the main purpose of credit risk control is to limit the risk–taken by the bank through carrying out specific procedures for monitoring the compliance with the law, regulations of the National Bank of Ukraine and standards of professional activity”¹³. Thus, the ultimate goal of credit risk control is to prevent credit risk from getting higher than the permissible level.

⁹ S. Shemshuchenko, *Legal Encyclopedia*, “Ukr. Encyclopedia”, Kyiv 2001.

¹⁰ K. Hizhevskyy, *Popular Legal Encyclopedia*, Hrinkom Inter, Kyiv 2002.

¹¹ L. Sloboda, *Regulation of bank credit risks*, Lviv 2006.

¹² N. Verhusha, *The mechanism of bank credit risk management*, SHEI “UAB NBU”, Sumy 2012.

¹³ A. Shepil, *Portfolio Credit Risk Control in a bank*, Access: <http://oldconf.neasmo.org.ua/node/493>

The overall objective of credit risk control is implemented through its objectives, including:

- developing internal policies and procedures for quantitative and qualitative assessment of credit risks, establishing effective procedures and methods of control over credit risk management process,
- establishing standards, that is, planned guidelines that have to be followed by the bank's departments when making credit transactions,
- control over keeping to the established limits, over loan portfolio state, over keeping to the internal and external regulations and provisions that regulate bank lending,
- forecast of individual and portfolio credit risk level based on a systematic analysis of external and internal factors affecting it,
- control over keeping to the main volume, temporal and spatial parameters of the credit process, their compliance with the conditions specified in the loan agreement,
- early discovery of negative trends in the change of the bank's risk positions, timely credit risk assessment and taking effective measures to minimize financial losses.

The aforementioned objectives of credit risk control is differentiated depending on the level of management, namely, one can single out task of strategic, tactical and operational level.

The importance of control in credit risk management is determined by the functions which it carries out. According to H Verhusha¹⁴ the functions of credit risk control are: informative, tracking and deviations control considering risk factors; corrective. In our opinion, this list of functions of credit risk control is not complete and should be supplemented with the following ones: cognitive, preventive and organizational.

Cognitive function of credit risk control reveals factors that influence the rise of credit risk in a bank, in order to regulate them.

Preventive function of credit risk control should ensure identification and prevention of credit risk.

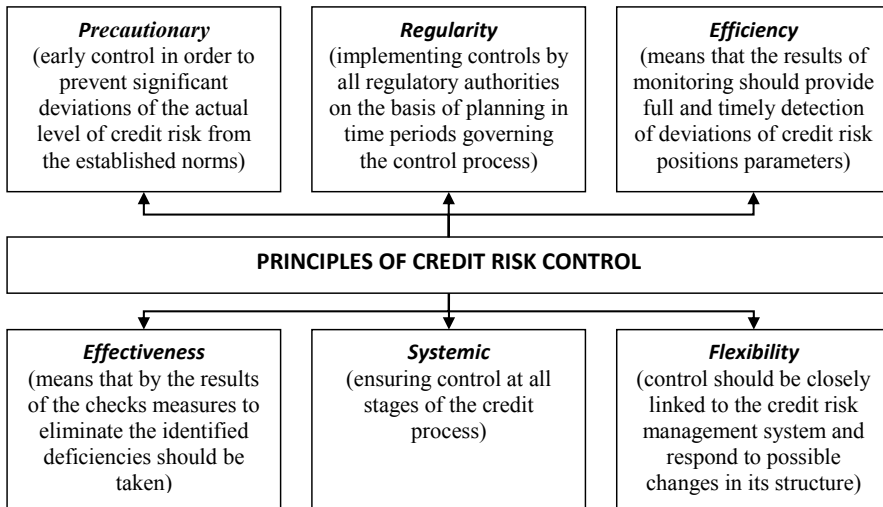
Organizational function of credit risk control involves the development and practical implementation of measures aimed at regulating credit risk, as well as forming the necessary information and regulatory support: the system of appropriate management reporting, principles of accounting and documentation of all procedures, provisions and regulations, risk standards, accepted methodology and relevant methods of analysis and risk assessment and etc.

Given the above, we suggest identifying the nature of bank credit risk control as a special type of management, structured by stages and directed to prevent, detect and eliminate negative trends in the change of the bank's risk positions, which is achieved through surveillance and regulation of such deviations.

We have noted that control is purposeful by its nature, therefore its effective implementation requires compliance with the complex of scientifically based principles. The analysis of the views of domestic and foreign researchers on understanding the principles of credit risk control allows to refer to the following ones: precautionary, regularity, efficiency, systemic, effectiveness, flexibility. Systematization of these principles is shown in Figure 1.

¹⁴ N. Verhusha, *The mechanism of bank credit risk management*, SHEI "UAB NBU", Sumy 2012.

Figure 1. Systematization of the principles of bank credit risk control



Source: the authors' own development.

From the organizational point of view, bank credit risk control is a system with a certain set of elements, among which there are the following components: subject, object, control action.

Control subject – a complex of bank divisions that within their competence are to ensure the implementation of credit risk control. The subjects of credit risk control are determined by the whole bank's risk management system and the organization of the credit process in it. The object of control is the bank's credit risk, the dual nature of its manifestation being considered – at the individual level and as a whole – by the total number of borrowers.

Thing of control a control is a particular object, which the control actions are aimed at. At the level of individual bank credit risk the article to control is: the financial condition of the borrower (guarantor, guarantee, actuary); state of provision; state of meeting the credit agreement obligations (special-purpose use, timely payment of interest and fees); business reputation of the borrower etc. At the level of portfolio credit risk the article to control are the figures of the credit risk based on the analysis of the loan portfolio.

Control actions should be understood as methodical tool of the control process. The main instruments of carrying out control are audit, analysis, check, credit inventory and monitoring.

Given the above, understanding and proper use of the set of credit risk controls is of great importance for the effective functioning of control in general. Therefore, we believe it is appropriate to consider the technology of credit risk control, which in schematic form is shown in Figure 2.

In general, the control technology describes the process of exercising control that involves: development of standards and regulations; comparison of actual results with predicted or normative ones, the size of deviations being determined; making necessary adjustments and managerial decision.

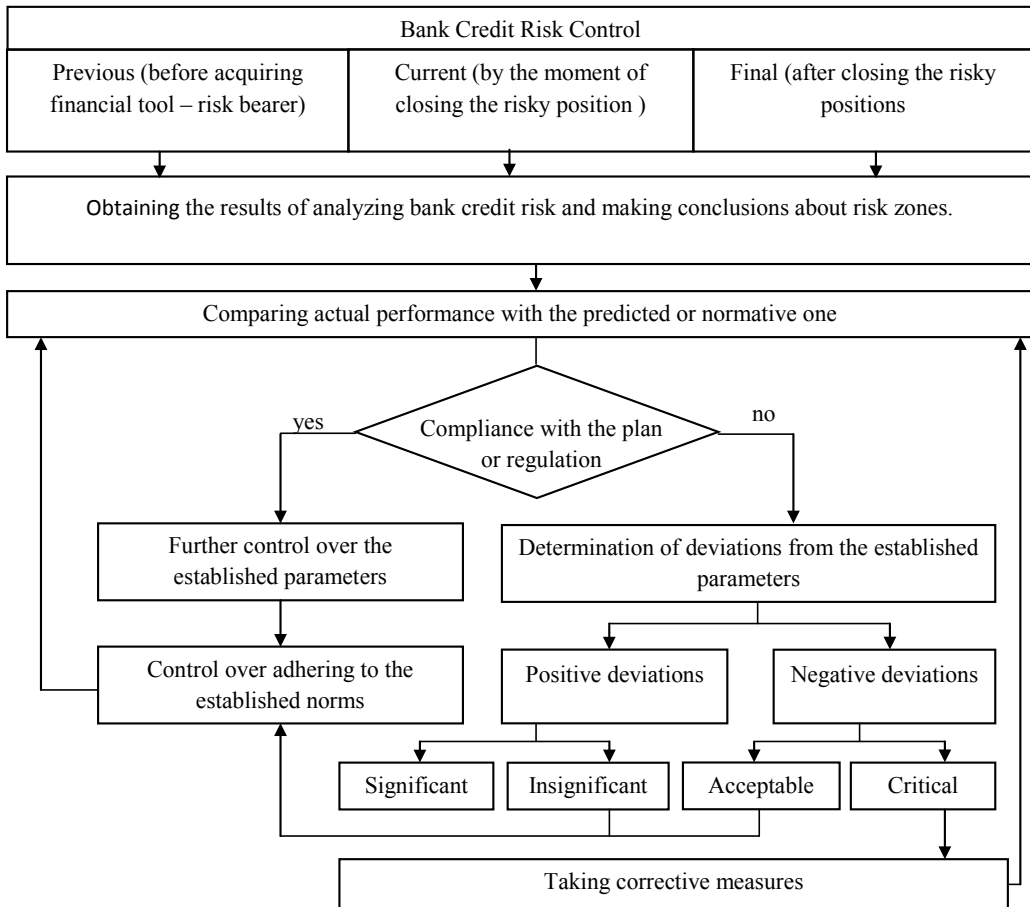
The function of credit risk control technology is continuous monitoring of the credit risk, its research, measurement and comparison. Based on its data the adjustment of the made decisions is undertaken.

Control of credit risk as a process consists of three stages:

- Previous controls,
- Current control,
- Final control.

Previous credit risk control is exercised at the stage of making decision on the expediency of credit operations. The bank decides whether to grant a loan to the borrower or to purchase a particular financial instrument that is risk bearer. The results of the preliminary bank credit risk control are the basis for making management decisions to avoid credit risk, if its level goes beyond the limits set by quantitative and qualitative standards of control, or taking the credit risk if it meets the level of bank quantitative and qualitative standards of control.

Figure 2. Technology of bank credit risk control



Source : developed by the author on working out¹⁵.

Current credit risk control is exercised both after granting the loan and periodically during the loan servicing when the growth of risk level of the borrower or its reduction is monitored. In case if the actual figure of the credit risk does not meet the established standards, management decisions are made about its regulation.

Final credit risk control is made after crediting the borrower to determine the result for this operation.

Implementation of credit risk control at every stage has its own specific features, as reflected in Table 1.

¹⁵ N. Verhusha, *The mechanism of bank credit risk management*, SHEI “UAB NBU”, Sumy 2012.

Table 1. Generalization of the stages peculiarities of credit risk control

Criteria	Previous credit risk control	Current credit risk control	Final credit risk control
Task	Deciding on the expediency of carrying out credit operations.	Control over the risk level deviations	Determining the result of the operation
Function	Organizational, Cognitive, Preventive, Information	Tracking and regulating deviations, information, corrective	Cognitive, information
Stage of exercising	By the moment of acquiring financial tool–risk bearer	After granting the loan and during the loan servicing	After crediting the borrower
Control tools	Analysis, inventory	Audit, analysis, revision, monitoring	Audit
Probability of eliminating deviations	High	Medium	Low
Information constituent	Reporting data of the client	Current financial data	Financial period data

Source: the authors' own development.

The carried out analysis of the peculiarities of credit risk control types indicates that one of the shortcomings of its organization from the methodological point of view is the focus on the current control. We believe that this way of organizing credit risk control is not effective enough, due to insufficient focus on preventiveness and predictability of control. In our opinion effective implementation of credit risk control in a bank should primarily be based on the function of forecasting credit risk, which will become a source of competitive edge of a bank and will result in maximizing profits and minimizing risks in the process of forming the resource base and efficient allocation of the involved funds.

Conclusion

At present, solving the problem of minimizing credit risk is one of the main tasks of the banking sector. Correct interpretation of the essence of credit risk control as well as the principles of its implementation will help commercial banks to exercise effective control over the risk, to determine the amount of the acceptable level of risk, to manage risk and also to minimize the extent of the impact the risk has on the activities of financial institutions.

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PART III

**INTERNATIONALISATION
AND INNOVATION AS A WAY
OF ENTERPRISE DEVELOPMENT**

Katarzyna Koziol-Nadolna
University of Szczecin, Poland

THE DEVELOPMENT OF THE INTERNATIONALISATION OF R&D IN THE MODERN ECONOMY

Summary

The purpose of this paper is to present theoretical issues related to the essence and development of the process of internationalisation of R&D activities in the modern economy. The paper consists of three parts, the first presents the essence and types of internationalisation of research and development, the second, the stages of global internationalization of R & D. The third section presents the motives and perspectives of this phenomenon.

The R&D internationalization is not a new phenomenon but in recent years its significance has increased and the process itself evolved. The following factors influenced this change: the globalization of markets because of technological progress, the integration of developed and developing economies (China, India), increasing specialization in a global chain of values, the internationalization of science, international mobility of scientists and their cooperation in branches of science.

* * *

Introduction

The 21st century has intensified changes occurring on the market, due to which enterprises have altered their innovative models. Global competition, short life cycle of products and technological progress have made innovative process more expensive and risky. As a result, enterprises share risk posed by R&D activity as well as cooperate with other enterprises and organizations. Seeking new sources of innovation, firms locate their R&D branches outside home country, all over the world. This phenomenon is called internationalisation of R & D activities.

P. Patel and K. Pavitt concluded in 1991 that the production of technology remains “far from globalized”, but concentrated in the home countries of the enterprises¹. In their words, research and development is “an important case of non-globalisation”.

¹ P. Patel, K. Pavitt, *Large Firms in the Production of the World's Technology: An Important Case of Non-Globalisation*, “Journal of International Business Studies”, 1991, 22, p. 17.

Almost 25 years later, a vast amount of evidence draws a different picture of R&D internationalisation: Enterprises not only produce and sell, but increasingly also develop goods and services outside their home countries. Today, it seems to be the rule, not the exception, that firms have R&D activities at different locations outside home country.

The purpose of this paper is to present theoretical issues related to the essence of the process of internationalisation of R & D activities in the modern economy. The paper consists of three parts, the first presents the essence and types of internationalisation of research and development, the second, the stages of global internationalization of R & D. The third section presents the motives and perspectives of this phenomenon.

Internationalisation of R&D activity – the essence and types

It would seem that the internationalisation of R&D is a fairly new phenomenon, as R&D traditionally was an activity centralised at a company's headquarter. R&D was seen as the core competence and regarded as being centralized to protect the firm-specific technology.

The internationalisation of R&D activity is not new to business practice. Nevertheless, it has assumed profound importance in recent years. This is mainly due to:

- integration between developed and developing economies (China and India),
- increasing specialization in global value chain,
- rapid development of information and communication technologies (ICT). Information and communication technologies facilitate the fragmentation of innovative process due to which they are subject to international trade,
- globalization of markets associated with technological progress,
- liberalization of regulations concerning international trade of services.

The greatest scale of R&D internationalisation is observed in three OECD regions, namely the United States, European Union and Japan. Recently there is a growing trend toward transferring R&D activity to developing countries (and states situated in East-Central Europe). The internationalization of this sphere provides new investment and job opportunities, but seizing these opportunities requires proper organizational and legal solutions both at national and international levels.

Internationalisation of R&D activity is a part of larger process of internationalization or even globalization of the entire innovative process or global innovative network. Science and innovation are two spheres on which globalization exerts a major effect. Globalization of innovation is inspired by seeking greater efficiency, competitiveness and lower costs throughout innovative process. One solution involves the fragmentation of production and innovation processes with the use of offshoring and outsourcing (see Table 1).

The internationalisation of R&D sphere may take various forms and be classified in a number of ways. Taken both markets (home and host) on which internationalization takes place into account, one may distinguish four types of the process. Traditional approach to internationalization refers to transferring R&D activity from one developed country to another, which was very common in the 20th century. On the contrary, modern approach involves transferring the aforementioned activity to developing country. Table 2 presents types of internationalisation.

Table 1. Offshoring and outsourcing

Place where services are being provided	Providing services inside or outside the firm	
	Inside	Outside
Home country	Services provided by domestic firm in home country	Services ordered to third party in home country (outsourcing)
Foreign country	Services provided by foreign branch of domestic firm, e.g. branch of Infineon company in Dublin, IT center of DHL company in Prague, center of telephone services of British Telecom in Bangalore and Hyderabad . This is referred to as captive offshoring	Services ordered to third party abroad: local firms, e.g. programming works ordered by Bank of America to Infosys company in India (offshoring or offshore outsourcing)

Source: *Światowy Raport Inwestycyjny 2004: Zwrot w stronę usług*. UNCTAD, 2004.

Table 2. Types of R&D internationalisation

	Developing country	Developed country
Developed country	Process of modern internationalisation (e.g. USA → China, UE → India)	Process of traditional internationalisation (e.g. USA → UE, Japan → USA)
Developing country	Process of expansive internationalisation (e.g. China → Brazil, India → China)	Process of catch-up internationalisation (e.g. China → USA, India → UE)

Source: M. von Zedtwitz, O. Gassmann: *Market versus technology drive in R&D internationalization: four different patterns of managing research and development*, "Research Policy", 2002, 31(4), pp. 569–588.

Another division² of R&D activity internationalisation includes four types of R&D branches (units) established abroad, namely:

- technological transfer units – are closely associated with production activity conducted by enterprises, adjust products and services to local conditions;
- national technological units – develop or improve products and services in order to meet local needs;
- regional technological units – develop products and services on regional markets;
- global technological units – develop products and services on global market.

² Ronstadt R.C., *International R & D: the Establishment and Evolution of Research and Development Abroad by Seven US Multinationals*, "Journal of International Business Studies", 1978, Vol. 9.

O. Gassmann and M. von Zedtwitz generalized the following five types of international R&D organization which differ in organizational structure and behavioral orientation (table 3)³:

1. Ethnocentric centralized R&D,
2. Geocentric centralized R&D,
3. Polycentric decentralized R&D,
4. R&D hub model,
5. Integrated R&D network.

Table 3. Five typical forms of international R&D organization

Type of R&D organization	Organizational structure	Behavioral orientation
Ethnocentric centralized R&D	Centralized R&D	National inward orientation
Geocentric centralized R&D	Centralized R&D	International cooperation
Polycentric decentralized R&D	Highly dispersed R&D, weak center	Competition among independent R&D units
R&D hub model	Dispersed R&D, strong center	Supportive role of foreign R&D units
Integrated R&D network	Highly dispersed R&D, several competence centers	Synergetic integration of international R&D units

Source: O. Gassmann, M. von Zedtwitz, *New concepts and trends in international R&D organization*, "Research Policy", 1999, 28, p. 235.

These authors observed within these organizational types, five principal trends:

1. Orientation of R&D processes towards international markets and knowledge centers;
2. Establishment of tightly coordinated technology listening posts;
3. Increase of autonomy and authority of foreign R&D sites;
4. Tighter integration of decentralized R&D units;
5. Increased coordination and re-centralization of R&D activities in fewer leading research centers in order to improve global efficiency.

The process of internationalisation of R & D can be considered in two categories: the internationalization of R & D of advanced (active) and basic (passive). The passive R&D internationalization was based on getting in touch and signing contracts with foreign partners regarding research cooperation, participation in international research programmes, getting international patents, but without research activity outside a mother country. The advanced (active) R&D internationalization, on the other hand, meant all ways of making this activity international, including the creation of R&D centres outside a mother country. Thus, the passive R&D internationalization precedes the expansion of an enterprise to foreign markets (active R&D internationalization). The passive way consists in gaining knowledge, experience, new skills, developing resources but without crossing borders.

³ O. Gassmann, M. von Zedtwitz, *New concepts and trends in international R&D organization*, Research Policy", 1999, 28, p. 235.

The results of research conducted in Polish and foreign companies in Poland shows that the process of R&D internationalisation in enterprises in Poland had two forms: transnational corporations applied an advanced (active) way of R&D internationalisation; Polish enterprises applied a basic one (passive).⁴

Stages of global internationalisation of R&D

Global internationalisation of R&D sphere took place in four stages (waves)⁵. The first wave of R&D internationalization dates back to the 1960's. The number of enterprises that located their R&D facilities outside home countries was very small. Most of them were technological transfer units. The main motive or driving force behind the first phase of the process was to get access to foreign market. This required adjusting products and technological processes to local conditions. Offshoring was the case mainly with electronic and automobile sectors.

The second wave took place in the 1970's. The main driving force at that time was the willingness to get share in local market. This required greater sensitivity to local differences in consumer preferences. Many foreign R&D branches have been established as a result of acquisition of local enterprise. This stage differed from the first one in the increase of national technological units. It is also worth noticing change in policy pursued by the country that admits investment, i.e. emphasis on the transfer of technologies.

The third phase of the process was observed in the 1980's. Research–development branches functioning abroad began to be treated as an element of long–term development strategy adopted by a given firm. Technological progress was the most important factor that gave rise to the globalization of this sphere. Furthermore, a tendency toward the diversification of technological activity as part of the network of corporate R&D units could be observed (establishing specialized centers abroad that deal with certain types of technologies).

The fourth wave of R&D internationalisation began in the 1990's and the scale of phenomenon was subject to increase. The scope of the process has expanded as countries chosen as R&D activity locations include East–Central Europe and Asia (China and India). This was mainly due to increasing demand for skilled scientific and research staff as well as growing costs of R&D.

Internationalisation of R+D – motives and perspectives

Research conducted by Edler et al.⁶ as well as Zedtwitz and Gassmann⁷ indicate that the offshoring of research is determined chiefly by supply factors, i.e. quality, number and specialization of research facilities. The main determinants are proximity of local universities, science parks and innovation centers. On the other hand, decision about locating development work depends on demand factors. Table 4 presents the results of the analysis. Differences between research and development are frequently not distinct but it should be borne in mind that they are independent of each other.

⁴ K. Koziol–Nadolna, *Internacjonalizacja działalności badawczo–rozwojowej w kształtowaniu procesów innowacyjnych przedsiębiorstw w Polsce*, CeDeWu, Warszawa 2013.

⁵ *Globalization of R&D and Developing Countries*, UNCTAD, New York–Geneva 2005, pp. 93–96.

⁶ J. Edler, F. Meyer–Krahmer, G. Reger, *Changes in the Strategic Management of Technology: Results of a Global Benchmarking Study*, „R & D Management” 2002, Vol. 32, No. 2.

⁷ M. von Zedtwitz, O. Gassmann, *Market versus technology drive in R&D internationalization: four different patterns of managing research and development*, “Research Policy”, 2002, 31(4), pp. 569–588.

Table 4. Motives behind locating research and development activity abroad

Motives behind locating research activity	Motives behind locating development activity
Proximity of local universities and scientific parks	Local market needs
Establishing the network of informal relations	Proximity of consumers and leading users
Limited research facilities in home country	Cooperation with local partners
Access to local specialists	Access to market
Sharing the risk associated with research	Taking advantage of different time zones
Support for local projects	Cost advantages
Local patent law	Adjustment of innovative process to local production
Reluctant acceptance of research in home country	Intellectual property protection

Source: M von Zedtwitz, O. Gassmann: *Market versus technology drive in R&D internationalization: four different patterns of managing research and development*. "Research Policy", 2002, 31(4), pp. 569–588.

Other studies⁸ divide factors that determine R&D location abroad into two categories, namely operating in developed and developing countries (see Table 5). In developed countries, the main determinants are, e.g. quality of research staff or cooperation with universities. What is interesting the same factors, and not only low costs of conducting activity, determine locating R&D in developing states.

Table 5. Motives behind locating R&D activity in developing and developed countries

Developing countries	Developed countries
1. Potential growth of the market	1. Quality of R&D staff
2. Quality of R&D staff	2. Quality of intellectual property law
3. Costs	3. Expert opinions offered by universities
4. Expert opinions offered by universities	4. Easy cooperation with universities
5. Easy cooperation with universities	5. Market factors such as potential growth of the market

Source: J. Thursby, M. Thursby: *Here or There? A Survey of Factors in Multinational R&D Site Location and IP Protection*. Marion Ewing Kauffman Foundation, Washington 2006.

Rask et al.⁹ present four perspectives on the internationalisation of firms in their article "Theoretical perspectives on the internationalisation of firms":

- Institutional–economic perspective – or transaction–cost perspective
- Learning perspective – Internationalisation process model

⁸ J. Thursby, M. Thursby, *Here or There? A Survey of Factors in Multinational R&D Site Location and IP Protection*, Marion Ewing Kauffman Foundation, Washington 2006.

⁹ M. Rask, J. Strandskov, D.D. Håkonsson, *Theoretical Perspectives on the Internationalization of Firms*, "Journal of Teaching in International Business", 2008, vol. 19, no. 4, pp. 320–345.

- Inter-organisational perspective – or the network perspective
- Strategic competition perspective.

Other authors indicate the following trends in industrial R&D (they have conducted 13 interviews with R&D and Innovation Managers in industrial companies to spot those trends that have a strong influence on the design of physical environments):¹⁰

- Increased networking: internationalisation of R&D sites, partnerships with international companies, universities and research organizations and increased level of offshoring and outsourcing.
- More customer focus & solution development: customised products, single source suppliers and customer retention through active customer support.
- Integration and efficiency of R&D processes: more pre-development, integration of R&D with planning, sales and supply management.
- More R&D flexibility (structure and processes): telework, R&D subcontracting.
- Digital support for R&D processes: integration of R&D software, simulation and virtual reality, design automation and modularisation and platforms.
- Availability and retention of employees: availability of engineers, new competences through team-work, interdisciplinarity or project management and new career paths.

You will notice that the first trend was identified internationalisation of R&D.

Dachs et al.¹¹ have been identified based on the literature potential opportunities, challenges and prospects for host and home countries from the internationalisation of R&D and innovation (see Table 6).

Table 6. Potential opportunities and challenges for national innovation systems from the internationalization of R&D and innovation

Opportunities for host country	Challenges & Risks for host country
<ul style="list-style-type: none"> • Increases in aggregate R&D and innovation expenditure • Knowledge diffusion to the host economy, • Demand for skilled personnel • Structural change and agglomeration effects 	<ul style="list-style-type: none"> • Loss of control over domestic innovation capacity and commercialization • Less strategic research, less radical innovations, more adapting • Separation of R&D and production • Competition with domestically owned firms for resources ('Crowding out')
Opportunities for home country	Challenges & Risks for home country
<ul style="list-style-type: none"> • Improved overall R&D efficiency • Reverse technology transfer • Market expansion effects • Exploitation of foreign knowledge at home 	<ul style="list-style-type: none"> • Loss of jobs due to relocation • Hollowing out' of domestic R&D and innovation activities • Technology leakage and involuntary knowledge diffusion

Source: B. Dachs, F. Kampik, T. Scherngell, G. Zahradnik, D. Hanzl-Weiss, G. Hunya, N. Foster, S. Leitner, R. Stehrer, W. Urban, *Internationalisation of business investments in R&D and analysis of their economic impact*, Directorate General for Research and Innovation, European Union, 2012, p. 7.

¹⁰ S. Schimp, F. Sturm, *R&D Workspace 2015+. Designing Spatial Solutions for Future R&D*, Fraunhofer Institut fuer Arbeitswirtschaft und Organisation IAO, Stuttgart 2011.

¹¹ B. Dachs, F. Kampik, T. Scherngell, G. Zahradnik, D. Hanzl-Weiss, G. Hunya, N. Foster, S. Leitner, R. Stehrer, W. Urban, *Internationalisation of business investments in R&D and analysis of their economic impact*, Directorate General for Research and Innovation, European Union, 2012, p. 7.

Conclusion

The paper shows that the internationalisation of R&D activity is a part of larger process of internationalization or even globalization of the entire innovative process or global innovative network. Science and innovation are two spheres on which globalization exerts a major effect. Globalization of innovation is inspired by seeking greater efficiency, competitiveness and lower costs throughout innovative process. One solution involves the fragmentation of production and innovation processes with the use of internationalization of R&D.

The internationalisation of R&D activity is not new to business practice, as indicated. It seems that the process of internationalization will continue important research problem

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Joanna Kurowska-Pysz
The University of Dąbrowa Górnicza, Poland

DEVELOPMENT OF ENTERPRISE INNOVATION THROUGH THE USE OF EU FUNDS

Summary

The paper discusses some aspects of using EU funds to improve innovation activity of enterprises and the implementation of innovative processes, as well as the implementation of other projects related to the economy based on knowledge, which relate to various aspects of innovation. Deliberations included in the paper were based on the analysis of the conditions of applying for funds in 2007–2013 and the effects of these actions by the example of the Regional Operational Programme of the Silesia Voivodeship for the years 2007–2013.

* * *

Introduction

The development of innovation in the economy and individual enterprises, is currently one of the key challenges faced by the EU countries. The higher the level of innovation activity of enterprises, the greater the chance for effective implementation of any innovations. Due to the complex nature of innovation processes and the accompanying risk, only some enterprises are ready for these types of investments. An important support for them are EU funds which co-finance the best projects, thus contributing to the improvement of innovation of these enterprises, and indirectly the whole economy. Not in every case, it is possible and reasonable to use EU funds to finance innovation. It is usually governed by specific guidelines which determine the availability of these measures and their allocation. Therefore, it is even more important to make optimal use of available grants by the enterprises, under the principle of their real usefulness for ongoing development activities.

The subject of this paper concerns the assessment of the conditions of applying for EU funds to support the development of innovative activity of enterprises and implementation of innovations in 2007–2013 (ex-post), as well as the implementation of projects based on this source of funding. The study was based on the evaluation of the Regional Operational Programme of the Silesia Voivodeship for the years 2007–2013 (ROP SV 2007–2013). The aim of the study is to analyse and assess the selected conditions and opportunities offered by the EU in the context of improving innovation of enterprises, and in a broader context – also the economy of the region. The conclusions drawn in this paper can

be useful information support both, for entities applying for funds for the development of innovative activity, as well as for managing authority responsible for the distribution of these funds.

Innovative activity of business entities and its results

Persistent expectations and rapidly changing consumer preferences, as well as objective technological conditions and the possibility of using external funds for this purpose – mobilize enterprises to seek a multidimensional innovation. The possibility of using EU funds, primarily non–repayable grants, encourages enterprises to profile innovative processes in accordance with the conditions of applying for these funds imposed by superior authority. More and more frequently, it happens that the practice of innovation processes goes beyond their definitions¹. One of the most frequently quoted approaches in the subject literature equates innovation with the implementation of a new or significantly improved product (a product or a service) or a process, a new marketing method or a new organizational method in business practice, workplace organization or business culture with the social environment². Innovative phenomena are usually seen in terms of the result (as a result, the effect) or a process (e.g. actions preceding the result e.g. the idea, research and development or project work, production and dissemination of innovation³).

The enterprises implementing innovation must pay special attention to innovation strategy, innovation culture, motivating employees and mobilizing other resources to support innovation processes. Most often there is a lack of funds for this purpose, hence the great popularity of EU funding sources for investment in innovation. Generally, the funds can be obtained both for planning and implementation of innovations, as well as for the development of innovative activity itself, which is a necessary period of business preparation in order to undertake innovative challenges.

L. Białoń defines the activity of innovative enterprises as a set of attitudes and actions leading to the creation and development of innovation potential, reinvigorating innovation processes leading to a better relationship between the incurred expenditure and the obtained effects, and to the improvement of relationships with customers. He presents the following in three dimensions:⁴

- the creation of innovative potential,
- the creation of innovative processes,
- activity in creating innovation value, understood as the production of the effects of the innovation process, demonstrated among others by the attractiveness of the market offer for the customer.

According to J. Jasiński, an active innovative enterprise is distinguished by⁵:

- conducting research and development works or making purchases of research and development projects, for which relatively high funds are allocated,
- a systematic implementation of new scientific and technical solutions,
- a large share of novelties (products and technology) in the range of products / services,
- continuous introduction of innovations into the market.

¹ E.g. Conditions for the use of funds for the development of innovations from the Regional Operational Programme of Silesia Voivodeship for the years 2014–2020.

² *Oslo Manual. Zasady gromadzenia i interpretacji danych dotyczących innowacji [Principles governing the collection and interpretation of data on innovation]*, Organizacja Współpracy Gospodarczej i Rozwoju, Urząd Statystyczny Wspólnot Europejskich, Warszawa 2008, p. 48.

³ E. Stawasz, *Innowacje a mała firma [Innovations vs a small business]*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 1999, p. 25.

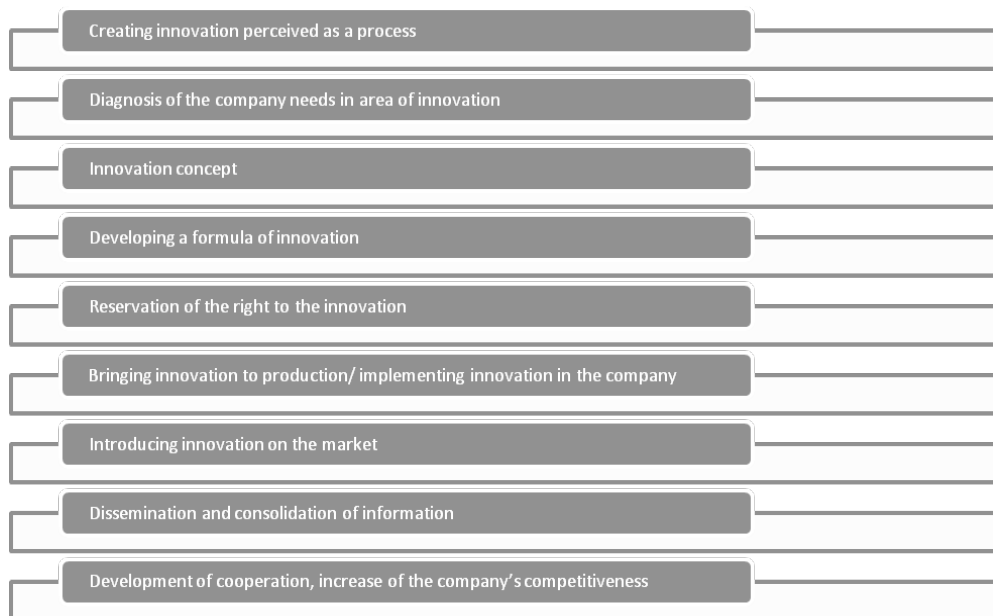
⁴ *Aktywność innowacyjna organizacji [Innovation activity of an organisation]*, scientific editor: L. Białoń, Oficyna Wydawnicza WSM, Warszawa 2008, p. 5.

⁵ A.H. Jasiński, *Przedsiębiorstwo innowacyjne na rynku, (Innovative enterprise on the market)*, KiW, Warszawa 1992.

Next to external sources of innovation which shape the company's access to universities, research and development units, competitors, buyers and suppliers, the potential for innovation of enterprises⁶ is determined by i.a. internal potential for innovation⁷, including: knowledge and experience of personnel, the efficiency of carried out research and development activities in the enterprise and the technology including, among others, machinery and equipment, computers, etc.

Implementation of innovative processes in enterprises is sequential and requires high activity and an open approach to changes, as well as ensuring appropriate quality of the innovation potential. Multiphase innovative processes (Figure 1) can be defined as an innovation activity, mostly in the areas of science, technology, management or finance, including investment in external resources, such as knowledge or technologies – leading to the implementation of innovations. In this perspective, innovation activities include, among others, research and development, the acquisition of external knowledge, machinery, equipment and other capital goods, trainings, co-operation of enterprises in knowledge-sharing networks⁸.

Figure 1. Sequential nature of innovation processes



Source: author's own research based on: J. Duraj, M. Papiernik–Wojdera, *Przedsiębiorczość i innowacyjność [Entrepreneurship and innovation]*, Difin, Warszawa 2010, p. 73.

⁶ E. Skawińska, R.I. Zalewski, *Klustry biznesowe w rozwoju konkurencyjności i innowacyjności regionów, (Business clusters in the development of competitiveness and innovation of regions)*, Świat – Europa – Polska, PWE, Warszawa 2009, pp. 149–151.

⁷ M. Zastępowski, *Ocena składników potencjału innowacyjnego przedsiębiorstw w Polsce (Assessment of innovative potential of enterprises in Poland)* /In:/ *Współpraca przedsiębiorstw w Polsce w procesie budowania ich potencjału innowacyjnego*, scientific editors: W. Popławski, A. Sudolska, M. Zastępowski, Dom Organizatora, Toruń 2008, p. 150.

⁸ *Oslo Manual...*, op. cit. p. 95.

Management of innovation activities in an enterprise includes processes for initiating, planning, organizing, supervision of the implementation and control over undertakings whose aim is to create and implement a specific innovation. Managing innovation activity requires decision-making in many functional areas of the company such as i.a.: staff, marketing, production, finance, purchasing, sales, research and development. This allows the creation of conditions for realization of the objectives of innovation activities, primarily for the implementation of innovation, which is an indicator of the long-term effectiveness of innovative activity. On the other hand, the current assessment of the efficiency of innovative activity may in turn be based on measures such as:

- expenditure on research and development activity during the year,
- number of employees involved in research and development activity of the company during the year,
- the number of implemented research and development projects,
- number of patents,
- the number of investments related to the implementation of innovations.
- the number of active partnerships with research units and other enterprises, leading to implementation of innovation.

Key principles for the implementation of projects aimed at innovation with the use of EU funds

In the widely understood investment activities of enterprises, a loan is the most commonly used source of funding. In the case of investment in innovation with an increased risk of inability to achieve expected results, banks are much more cautious in providing funding. Following the widely disseminated information about the availability of EU funds for investments in innovation, numerous enterprises try to win grants for this purpose. The grant is non-repayable financial resources, obtained through support from the state, intended for various forms of economic activity. The advantage of using a grant is a lack of necessity to pay for the used capital⁹. After completion of the project, the fixed assets or intangible assets, etc. acquired through the grant are included in the assets of the beneficiary (i.e. the entity receiving a grant), provided it settles a project appropriately, obtains the declared outputs and results (in this case relating to innovation) as well as fulfils all the conditions of the grant agreement. Against the background of alternative ways of financing investments, especially in comparison with the loan, the process for obtaining grants is burdened with many non-standard difficulties, yet for an entrepreneur a bonus for overcoming them is raising non-refundable capital.

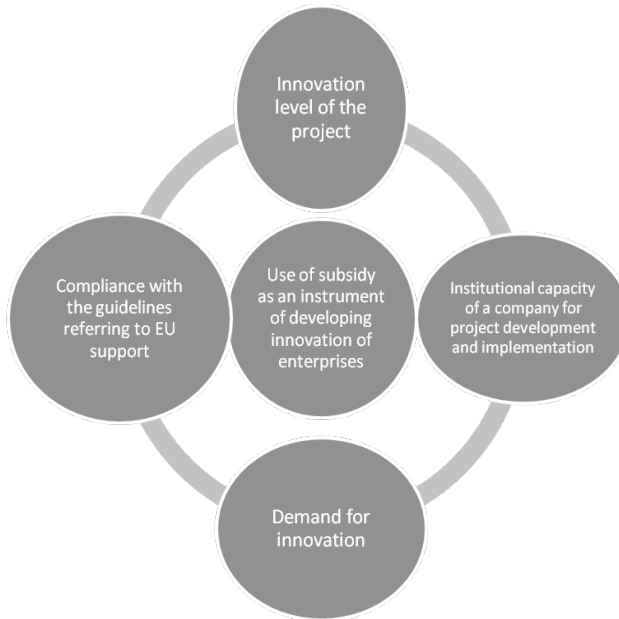
Enterprises wishing to take advantage of this opportunity should take into account the key factors connected with the process of using the EU funding, as shown in Figure 2.

Entities applying for EU subsidies must closely adjust their project to the existing guidelines. This is usually an operational program, from which support, guidance related to competition for subsidies and other provisions governing applicants are financed, for example provisions of the law on public assistance. Enterprises planning to use the support often adjust the scope of their projects to the conditions of obtaining grants, among others, in terms of:

- the cost of the project and the deadline for its implementation (to match the terms of the competition)
- theme of the project (taking into account the types of project activities for which funding can be obtained),

⁹ T. Biernat, *Finansowanie działalności przedsiębiorstwa przez fundusze europejskie (Financing activities of the company from EU funds)* /In:/ *Finansowanie działalności gospodarczej w Polsce*, scientiic editors: I. Pruchnicka-Grabias, A.Szelągowska, Wydawnictwo CeDeWu, Warszawa 2006, p. 279.

Figure 2. Key considerations associated with the use of EU subsidies for the development of innovation enterprises



Source: author's own research.

- compatibility of the project with the criteria for assessing applications, e.g. taking into account additional employment or cooperation with universities within the project, which is awarded during application assessment.

High formal and substantive demands, accompanying the process of applying for EU funds mean that, in the opinion of potential applicants, applying for a grant is burdened with a high risk of insufficient quality of the project, which makes it impossible to get financing. As it is known, the application process is generally based on the competition procedure, which means that support will be given only to the best projects. In this situation, the company applying for funds runs the risk of not getting the support of the EU, and the need to seek alternative sources of funding for the project. In addition to such risk, there are also many other risks which project implementers must take into consideration¹⁰. These include i.a. the risk of incorrect implementation of the project and return of the funds. There is a strict catalog of circumstances that may give rise to a refund of the obtained support¹¹.

In case of the projects relating to the implementation of innovation and the development of innovative activity of enterprises, the chances of obtaining EU funding are associated not only with the quality of the project, but also with the level of innovation of the adopted technological solution for which support is sought to be obtained. Top rated are those projects that relate to highly innovative solution (criterion

¹⁰ W.A. Werner, *Zarządzanie w procesie inwestycyjnym*, (Management in the investment process), Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 1999, p. 153–156.

¹¹ *Wtyczne w zakresie sposobu postępowania w razie wykrycia nieprawidłowości w wykorzystaniu funduszy strukturalnych i Funduszu Spójności w okresie programowania 2007–2013*, (Guidelines on how to proceed in the event of irregularities in the use of structural funds and the Cohesion Fund in the programming period 2007–2013), Warszawa, February 2008, www.mrr.gov.pl, [10.11.2015].

‘degree of project innovation’¹²). Review of innovation, analyzing the level of innovation of the given project is one of the key elements taken into account. Among other criteria¹³, there are among others:

- impact of the project on the development of the sector R & D (weight 2),
- impact of project on the implementation of EU horizontal policies included in ROP SV (weight 0.5),
- compliance with technological specialization areas listed in the Regional Innovation Strategy of the Silesian Voivodeship (weight 0.5).
- creation of new jobs in the company (weight 1),
- impact of the project implementation on increase of competitiveness of the company (weight 2),
- impact of the project on economic and social development of the Silesia province (weight 2.5)¹⁴.

Assessment of the degree of projects compliance with the criteria resulting from the guidelines, multiplied by the weights assigned to each criterion, enables a final allocation of a score to each project and selection of these application forms, which gain the support within the available funding.

It follows that an entrepreneur seeking support for innovative actions should expect to be asked to demonstrate the highest level of project innovation, in particular by fulfilling the conditions mentioned above and many others, which are individually tailored to the nature of the competition, e.g. in projects for cluster support, what is taken into account is the number of declared technology transfers between the clusters and the number of cooperative relations that are generated between the cluster members and a number of business environment institutions or universities¹⁵.

Entrepreneurs benefiting from a grant must prepare for the need of applying specific methodology during their implementation. It results from the adoption of the EU support and the necessity of its settlement in accordance with applicable guidelines. The key aspects which should be focused on, are:

- the need to ensure own resources or external funds (e.g. a bridging loan) for the whole project, since the grant is awarded on the basis of refinancing and no advance payment is paid,
- the need to create a team that will watch over proper implementation of the project from the point of view of EU requirements, e.g. to provide the required reporting and cyclic measurement of project indicators, ensuring adequate promotion of the project, a competitive mode of selection of suppliers and contractors, and appropriate account assignment and cost accounting, and making payment arising from the project,
- the need to ensure sustainability of the project, i.e. maintaining, the declared in the application form, way of using the infrastructure acquired for the project, maintaining the declared level of employment, market allocation of innovation for the purposes described in the application, etc.

The last, but probably the key aspect of the decision to implement the project focused on innovation using EU support is demand for innovation, that is the market value of the solution that due to project implementation is expected to reach the recipients. Every entrepreneur who plans to use the grant must also compare the cost and the laborious process of obtaining it to their market needs. From the perspective of strategic business development it is obligatory to find answers, among others, to the following questions:

- Is the project adapted to EU requirements also optimal from the point of view of the company needs?
- Was the identification of the attractiveness of market innovation and demand for new solutions from existing and potential customers performed in a reliable manner?

¹² *Kryteria wyboru projektów projektów (Project selection criteria)*, Załącznik nr 6 do Szczegółowego Opisu Priorytetów Regionalnego Programu Operacyjnego Województwa Śląskiego na lata 2007–2013 (Annex 6 to the Detailed Description of Priorities of the Regional Operational Programme of Silesia Voivodeship for the years 2007–2013), Katowice, December 2011, www.scp-slask.pl/zalaczniki, [10.11.2015].

¹³ *Ibidem*.

¹⁴ *Ibidem*, p. 38–39.

¹⁵ *Kryteria wyboru projektów ...*, op. cit.

- Is the company able to ensure the continuation of the objectives of the project after its completion (within its sustainability) taking into account the changeability of the market?
- Is the level of funding available to be obtained (including regulations on public assistance it is not usually more than a few dozen percent of project net value) attractive enough to decide on a possible implementation of the project, taking into account all the consequences that EU support brings?

As the research has shown, most enterprises defend themselves against radical changes resulting from the rapid implementation pace of innovative processes, more often opting for evolutionary change. Given only the choice of modernizing the technology existing in other enterprises, implementing technologies already used in other enterprises or implementation of innovation – most enterprises declare only a desire to modernize the technology, whereas there is less interest in technology or product benchmarking and imitation of other enterprises. Relatively the smallest number of enterprises declares the need for implementation of innovations¹⁶.

Development of enterprises innovation based on the EU funding by the example of ROP SV 2007–2013

Since 2004, Polish enterprises use a variety of funding opportunities relating to innovation through EU funding. The funds have so far been drawn, among others, from the Sectoral Operational Programme Increase of Economic Competitiveness 2004–2006, the Operational Programme Innovative Economy 2007–2013, regional programs, cross-border programs and programs for the development of human resources as well as other funds.

The possibility of obtaining grants for the development of innovation was also enabled by ROP SV 2007–2013 with a total value of financing of 1 747.10 million EUR from the European Regional Development Fund. In this programme, a total of 130 459 295 EUR was allocated for projects related to innovation in enterprises (Measure 1.2.3)¹⁷. The implemented projects were aimed at stimulating rapid development, while strengthening social, economic and spatial cohesion of the Silesian voivodeship. Within this program, in the I Priority: Research and technological development (R & D), innovation and entrepreneurship were supported by improving infrastructure for economic development, investment promotion and development of micro, small and medium-sized businesses through direct investments and consulting as well as technology and innovation transfer (see Table 1)¹⁸. Implementation of projects aimed at innovation was possible, among others, within Submeasure 1.2.3. Innovations in micro-enterprises and SMEs, where it was possible to obtain up to 60% funding of eligible costs¹⁹.

Verification of projects innovation was carried out mainly on the basis of the application form, which requires, among other, reference to:

- the impact of the project on the implementation of innovations in the region, a country or worldwide for up to 3 years, or unknown and not used previously,
- compatibility of the project with technological areas in Technology Development Program of the Silesian Voivodeship 2010–2020,
- inclusion in the project of high or medium-high intensity of research and development activities,

¹⁶ J. Kurowska-Pysz, *Innowacyjna firma w konkurencyjnym otoczeniu rynkowym (Innovative company in a competitive market environment)* /in:/ *Zarządzanie XXI wieku – nowe koncepcje zarządzania*, scientific editors: H. Dźwigoł, J. Kurowska-Pysz, D. Owsiak, Wydawnictwo Akademii Techniczno-Humanistycznej w Bielsku-Białej, Bielsko-Biała 2012, p. 162.

¹⁷ *A detailed description of the priorities of the Regional Operational Programme of Silesia Voivodeship for the years 2007 – 2013*, www.rpo.slaskie.pl [19.11.2015].

¹⁸ Ibidem.

¹⁹ Ibidem.

- the quantity of patents purchased in the project and the number of implemented innovation and new technologies, as well as the number of implemented results of research and development works.

Table 1. Types of operations implemented within the projects of Submeasure 1.2.3. ROP SV 2007–2013

It. No.	Submeasure 1.2.3. Innovations in micro–enterprises and SMEs	Projects number	Projects value
1.	Implementation and commercialization of innovative technologies and products	643	779 405 319.95
2.	Support for the adoption or development of R & D activity in micro, small and medium–sized enterprises	13	7 508 436.36
3.	Advisory services relating to the implementation of enterprise development strategy based on new technologies and innovative solutions.	5	753 960.00

Source: *Ex–post valuation ROP SV 2007–2013*.

Submeasure 1.2.3. was dominated by projects for the implementation and commercialization of innovative technologies and products. Only occasionally companies requested the grant for advisory services or development of R & D activities in enterprises. It is difficult to talk about the impact of EU support for the sustainable development of innovative businesses and the economy of the region. The majority pro–innovation activities was concentrated in the centre of the region, i.e. in the cities of the Silesian Agglomeration, where innovation is most visible even without the EU support. Enterprises perceived innovative projects as one–time action. Great importance was not given to sustain high innovation activity of enterprises, among others, by providing conditions for continued research and development. A standard of cooperation between enterprises and business environment institutions through advisory services related to the implementation of enterprise development strategies, based on new technologies and innovative solutions, has not been shaped. Counselling aimed to implement an enterprise development strategy based on new technologies and innovative solutions was implemented merely in 5 projects²⁰.

When it comes to other types of pro–innovation measures implemented by enterprises based on ROP SV 2007–2013 – the following data can be quoted:

- more than 900 projects relating to the extension of an existing enterprise and enabling the introduction of new or improved products/ services were implemented and more than 500 projects gained the support for modernization activities associated with this process,
- about 200 projects related to commencement of export activity, and more than 700 projects – promotion of products/services outside the country,
- nearly 20 projects were implemented, referring i.a. to the construction and retrofitting of industrial and technology parks and technology transfer centres and 12 projects supporting R & D units,
- 1 laboratory providing services for the economy was adjusted,
- nearly 30 clusters of local and regional importance were created²¹.

It should be noted that the scale of pro–innovation measures implemented under ROP SV 2007–2013 was conditioned by the means available for this. In every action, far more applications had been

²⁰ *Ex–post evaluation post ROP SV 2007–2013*, www.slaskie.pl.

²¹ *Ibidem*.

submitted than could gain support. Enterprises wishing to take advantage of these funds had to adapt their projects to the conditions of the grant use. This caused that the process of projects implementation aimed at developing enterprises innovation with the EU support was less flexible inter alia, because of the following circumstances:

- the need for strict compliance with the schedule and cost estimate of the project,
- lack of possibility to introduce significant changes in the project during its implementation,
- the need to achieve the declared project results regardless of the circumstances of its implementation (except for the so-called force majeure).

The above-mentioned specific conditions, as well as the relatively long period of waiting for the evaluation of projects and their settlement for some enterprises proved a difficult barrier to overcome in the process of innovation implementation. The above-described scale of activities undertaken under ROP SV 2007–2013 does not reflect all forms of innovation activity of enterprises in the Silesia Voivodeship, since some enterprises also applied for funds from the Operational Programme Innovative Economy as well as other sources.

Regardless of the source of funding innovative activities of enterprises, the effects of implemented projects do not appear automatically after their settlement. In general, innovation processes are activities that require time to fully achieve the desired effect, hence the results of these actions can be assessed in a few years.

Conclusion

The development of enterprises innovation based on support from EU funds, including ROP SV 2007–2013 is visible; however, its lasting results will be possible to be evaluated in a much longer perspective. Currently, there are not any comparative studies of the Silesian Voivodeship available which would relate to the development of innovation using EU funds and without this form of support.

Despite the availability of EU funds, a relatively small number of enterprises actually benefit from this support, which is due to a number of reasons. Certainly, not all enterprises understand the need for the development of innovation, and only some of them see a potential of using EU funds for this purpose. It is hard to claim that knowledge of the principles of applying for EU grants is widespread. It is rather the domain of consulting and advisory firms than the entrepreneurs themselves. Numerous complexities also arise from the very application procedure. Every effort should be made to ensure that the application has been prepared professionally and as much as possible fitted in the election criteria for projects. At the same time, however, the project cannot be overly deformed to suit the EU requirements, since a result of the use of EU support should be the implementation of innovative needs of enterprises and not only using the grant. It is therefore necessary to emphasize that it is not always the case that reaching for an EU grant for the development of innovation will be possible and desirable.

A mistaken view that the use of subsidies does not require security for the loan or engagement of own resources is also widespread among enterprises. There are a number of other barriers to the use of EU subsidies for investment purposes²² i.a. among others, for many enterprises the need to obtain an opinion about innovation, which should be drawn up by a research unit is an additional discouraging impediment. It is well known that science–business cooperation barriers do not facilitate the implementation of innovations in Polish conditions.

²² See more: J. Kurowska–Pysz, *Dotacja jako instrument współfinansowania kosztów inwestycji w przedsiębiorstwach na przykładzie Regionalnego Programu Operacyjnego Województwa Śląskiego 2007–2013* (Grant as an instrument of co-financing of investment costs in enterprises by the example of the Regional Operational Programme Silesian 2007–2013 /In:/ Zarządzanie kosztami przedsiębiorstwa w warunkach globalizacji, Redakcja naukowa J. Chluska, Wydawnictwo Politechniki Częstochowskiej, Częstochowa 2012, pp. 87–104.

From the very essence of EU support it shows that the thematic scope of co-financed projects is quite narrow. There is no way to support projects which do not fit in a designated area of eligibility, as well as not meeting the criterion relating to the project value or the date of its implementation.

The awarded grants do not solve completely the problem of shortage of capital to finance investments in innovation in enterprises, primarily in the sector of small and medium-sized enterprises. However, this is an example of support from the public sector for enterprises seeking capital for growth, where in many cases, despite defining the attractive concept of an innovative project it is failed to obtain funds for its financing on the capital market. In this respect, subsidies for innovation should be considered not only as a direct, non-repayable financial support for enterprises focused on innovation, but also an impulse for innovation in a broader aspect and building a knowledge-based economy.

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Izabela Konieczna

Jan Kochanowski University in Kielce, Poland

FEATURES OF THE OFFER IN THE SPHERE OF INNOVATION AND R&D – THEIR IMPORTANCE FROM THE POINT OF VIEW OF THE CUSTOMER IN THE ASSESSMENT OF DAIRY COOPERATIVES FROM THE ŚWIĘTOKRZYSKIE PROVINCE

Summary

The aim of the paper is an analysis of the validity of the features of the offer for customers in the area of the innovation and R&D in the assessment of dairy cooperatives from the świętokrzyskie province. The analysis is based on the results of direct interviews conducted with the help of the questionnaire in 50% of the population of dairy cooperatives from świętokrzyskie province. Taking into account the respondents' answers it is clear that for their customers the most important feature of the offer is rapid response to customer signals on the presented offer; and the least important of all indicated features of the offer is more frequent introduction of new products to the market than competitors.

* * *

Introduction

Various drivers encourage an organization to innovate. Each of these drivers demands continuous innovation and learning so that the process can be repeated continuously. These drivers also help to create a sense of urgency around the need to create new organizational goals and generate new ideas for meeting these goals. These drivers can be summarized as follows: (1) emerging technologies, (2) competitor actions, (3) new ideas from customers, strategic partners, and employees, (4) emerging changes in the external environment¹. The paper is taking into account one of these drivers, i.e. customers. The

¹ D. O'Sullivan, L. Dooley, *Applying Innovation*, SAGE, London 2009, p. 12.

aim of the paper is an analysis of the validity of the features of the offer for customers in the area of the innovation and R&D in the assessment of dairy cooperatives from the świętokrzyskie province. The analysis is based on responses of cooperatives' executives, who were asked to assess the validity of the features of the offer for such customers as consumers, companies–users (gastronomy), wholesalers, independent retail grocery stores, large retail chains, local retail chains, intermediary agents in food trade, other dairies, and other institutional purchasers.

Innovation – a theoretical background

Innovation is the specific function of entrepreneurship. It is the means by which the entrepreneur either creates new wealth–producing resources or endows existing resources with enhanced potential for creating wealth². Most innovations, result from a conscious, purposeful search for innovation opportunities, which are found only in a few situations. Four such areas of opportunity exist within a company or industry: unexpected occurrences, incongruities, process needs, and industry and market changes. Three additional sources of opportunity exist outside a company in its social and intellectual environment: demographic changes, changes in perception, and new knowledge³.

Innovation can be considered as:

- Transformational innovations that are the inspiration for completely new projects or manufacturing processes and have the greatest economic impact.
- Real innovations that are new to both the customer and the manufacturer. These innovations are like a second generation of transformational innovation.
- Incremental innovation, which are the daily driver of change in the enterprise. Incremental innovation is an improvement to what was⁴.

For innovation should be considered a product, process, marketing or organizational method that is new for a particular enterprise or significantly improved, which the company has developed as the first, as well as those that have been absorbed by other companies or entities. There are three levels of news relating to innovation: novelty to the firm, novelty to the market, and novelty to the world⁵. Innovations are the result of the innovation process, which has often its origins in research (R&D). The process of innovation consists of several successive phases (cells) to form the value of the innovation⁶.

Innovations are not only conducive to the realization of strategy focused on the increase in value, but allow achieving efficient and sustainable development and stabilize the condition of an entity especially in conditions of economic crisis⁷. Innovations include not only technical, but also economic and organizational ventures, and refer to the fundamental, radical changes associated with the transformation of a new idea or invention into a market product or process. These changes concern the introduction of new products, production methods, opening a new market, gain a new source of resources (raw materials, semi–finished products) as well as the reorganization of the industry⁸.

² P. Drucker, *The Discipline of Innovation*, “Harvard Business Review”, 2002, August, p. 5.

³ Ibidem, s. 6.

⁴ E. Pająk, *Zarządzanie produkcją. Produkt, technologia, organizacja*, Wydawnictwo Naukowe PWN, Warszawa 2006, p. 340.

⁵ J. Duraj, M. Papiernik–Wojdera, *Przedsiębiorczość i innowacyjność*, Difin, Warszawa 2010, p. 67.

⁶ *Tożsamość i wizerunek marketingu*, scientific editor: R. Niestrój, Polskie Wydawnictwo Ekonomiczne, Warszawa 2009, p. 202.

⁷ *Podejście innowacyjne w zarządzaniu przedsiębiorstwem*, scientific editors: R. Nowacki, A. Adamska, Difin, Warszawa 2010, p. 47.

⁸ J. Duraj, M. Papiernik–Wojdera, *Przedsiębiorczość...* op. cit., p. 65.

Companies can use mutual innovation when the customer participates in the work of innovation or (and) the development of products or processes⁹. Customer and competitor orientations ensure simultaneous investments in exploiting existing product innovation competencies and exploring new ones¹⁰.

The general rules, in force in management of the innovation are: firstly, to obtain the conviction that the intended innovation is desirable and necessary, and secondly, when one is already convinced about that, consistent work on their origination and refinement¹¹.

Innovators are successful in those areas where they can identify and reduce risk. They are successful in areas where they are systematically analyzing sources of opportunities for innovation, then grab this opportunity and exploited it—whether it be a chance associated with a small, clear risk, such as the use of unexpected phenomena or the need for the process and when the chance is based on deep knowledge innovation associated with much larger, but still giving to define risk¹². According to *Millennial Innovation survey* conducted by Deloitte most responsible for innovation are such sectors as: TMT (52%¹³), consumer business (47%), manufacturing (37%), healthcare and life sciences (23%), resources and energy (18%), public sector (15%), and financial services (14%)¹⁴. In the same time the survey shows that sectors most in need of innovation are: public sector (64%), energy and resources (48%), consumer business (39%), TMT (34%), healthcare and life sciences (32%), manufacturing (25%), and financial services (24%)¹⁵.

An analysis of the validity of the features of the offer for customers in the area of innovation and R&D in the assessment of dairy cooperatives

The analysis is based on the results of direct interviews conducted with the help of the questionnaire in 50% of the population of dairy cooperatives from świętokrzyskie province. Cooperatives' executives were asked to assess the validity of the features of the offer for customers in the area of innovation and R&D. Interview results are shown in Table 1, Figure 1 and Figure 2.

When analyzing Table 1 and Figure 1, it is clear that:

- The degree of modernity of the product, i.e. its innovativeness was considered as very important for consumers, companies—users (gastronomy), wholesalers and local retail chains (mean rating 4.0).
- Compliance with fashion trends was found as very important for consumers, wholesalers (mean rating 4.00), local retail chains (mean rating 3.67), and companies—users (gastronomy) (mean rating 3.5).
- More frequent than competitors introduction of new products to the market was considered as very important for consumers (mean rating 4.00), and wholesalers (mean rating 3.67), and as quite important for local retail chains (mean rating 3.33), and companies—users (gastronomy) (mean rating 3.0).
- More frequent than competitors product innovation was found as very important for consumers, companies—users (gastronomy) (mean rating 4.0), and wholesalers (mean rating 3.67), and as quite important for local retail chains (mean rating 3.33).

⁹ B. Mikuła, *Organizacje oparte na wiedzy*, Wydawnictwo Akademii Ekonomicznej w Krakowie, Kraków 2006, p. 174.

¹⁰ K. Atuahene-Gima, *Resolving the Capability – Rigidity Paradox in New Product Innovation*, “Journal of Marketing” 2005, Vol. 69, No. 4, p. 61.

¹¹ *Przedsiębiorstwo przyszłości. Fikcja i rzeczywistość*, scientific editor: I. Hejduk, Instytut Organizacji i Zarządzania w Przemysle ORGMASZ, Warszawa 2004, p. 12.

¹² P. Drucker, *Mysli przewodnie Druckera*, MT Business, Warszawa 2000, pp.413 – 414.

¹³ Percentage of responses.

¹⁴ *Millennial Innovation survey*, Deloitte, January 2013, p. 17.

¹⁵ *Ibidem*, s. 18.

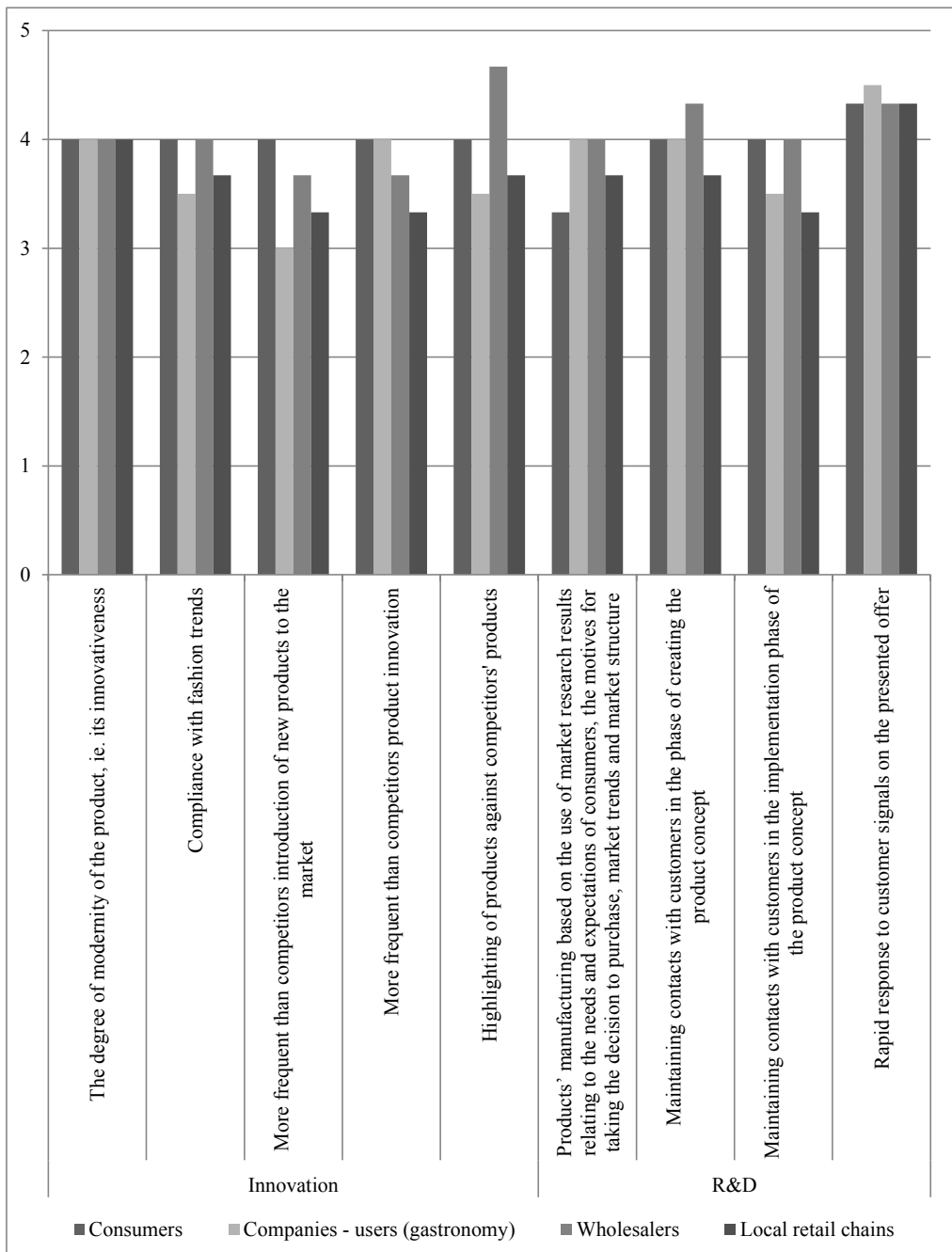
Table 1. The validity of the features of the offer for customers in the area of the innovation and R&D in the assessment of dairy cooperatives from the świętokrzyskie province

Features / elements of the offer		Consumers	Companies–users (gastroonomy)	Wholesalers	Independent retail grocery stores	Retail chains		Intermediary agents in food trade	Other dairies	Other institutional purchasers	Mean
						Large	Local				
Innovation											
The degree of modernity of the product, i.e. its innovativeness	Mean	4.00	4.00	4.00	0	0	4.00	0	0	0	4.00
	Standard deviation	0.000	0.000	1.000	0	0	0.000	0	0	0	
	Median	4.00	4.00	4.00	0	0	4.00	0	0	0	
Compliance with fashion trends	Mean	4.00	3.50	4.00	0	0	3.67	0	0	0	3.79
	Standard deviation	0.000	0.707	0.000	0	0	0.577	0	0	0	
	Median	4.00	4.00	4.00	0	0	4.00	0	0	0	
More frequent than competitors introduction of new products to the market	Mean	4.00	3.00	3.67	0	0	3.33	0	0	0	3.50
	Standard deviation	0.000	1.414	0.577	0	0	1.155	0	0	0	
	Median	4.00	3.00	4.00	0	0	4.00	0	0	0	
More frequent than competitors product innovation	Mean	4.00	4.00	3.67	0	0	3.33	0	0	0	3.75
	Standard deviation	0.000	0.000	0.577	0	0	1.155	0	0	0	
	Median	4.00	4.00	4.00	0	0	4.00	0	0	0	
Highlighting of products against competitors' products	Mean	4.00	3.50	4.67	0	0	3.67	0	0	0	3.96
	Standard deviation	0.000	0.707	0.577	0	0	0.577	0	0	0	
	Median	4.00	4.00	5.00	0	0	4.00	0	0	0	
R&D											
Products' manufacturing based on the use of market research results relating to the needs and expectations of consumers, the motives for taking the decision to purchase, market trends and market structure	Mean	3.33	4.00	4.00	0	0	3.67	0	0	0	3.75
	Standard deviation	0.577	0.000	0.000	0	0	0.577	0	0	0	
	Median	3.00	4.00	4.00	0	0	4.00	0	0	0	
Maintaining contacts with customers in the phase of creating the product concept	Mean	4.00	4.00	4.33	0	0	3.67	0	0	0	4.00
	Standard deviation	0.000	0.000	0.577	0	0	0.577	0	0	0	
	Median	4.00	4.00	4.00	0	0	4.00	0	0	0	
Maintaining contacts with customers in the implementation phase of the product concept	Mean	4.00	3.50	4.00	0	0	3.33	0	0	0	3.71
	Standard deviation	0.000	0.707	0.000	0	0	0.577	0	0	0	
	Median	4.00	4.00	4.00	0	0	3.00	0	0	0	
Rapid response to customer signals on the presented offer	Mean	4.33	4.50	4.33	0	0	4.33	0	0	0	4.37
	Standard deviation	0.577	0.707	0.577	0	0	1.155	0	0	0	
	Median	4.00	5.00	4.00	0	0	5.00	0	0	0	

Notes: scale: 1–5, where 5–extremely important, 4–very important, 3–quite important, 2–little important, 1–completely unimportant, 0–not applicable.

Source: author's own research.

Figure 1. The validity of the features of the offer for customers in the area of the innovation and R&D in the assessment of dairy cooperatives from the świętokrzyskie province



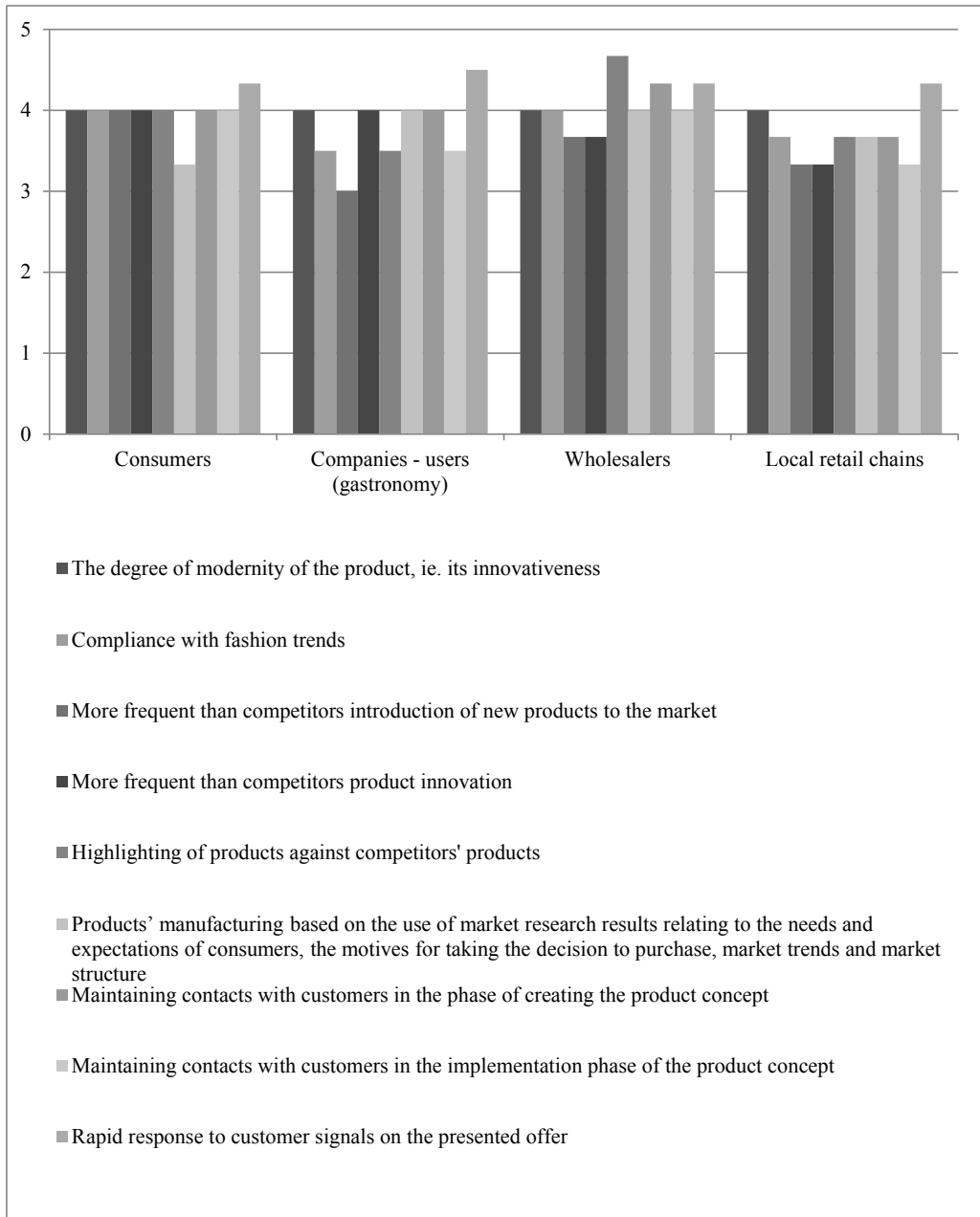
Source: author's own research.

- Highlighting of products against competitors' products was considered as extremely important for wholesalers (mean rating 4.67), as very important for consumers (mean rating 4.00), local retail chains (mean rating 3.67), and companies–users (gastronomy) (mean rating 3.50).
- Products' manufacturing based on the use of market research results relating to the needs and expectations of consumers, the motives for taking the decision to purchase, market trends and market structure were found as very important for companies–users (gastronomy), wholesalers (mean rating 4.00), and local retail chains (mean rating 3.67), and as quite important for consumers (mean rating 3.33).
- Maintaining contacts with customers in the phase of creating the product concept was considered as very important for wholesalers (mean rating 4.33), consumers, companies–users (gastronomy) (mean rating 4.00) and local retail chains (mean rating 3.67).
- Maintaining contacts with customers in the implementation phase of the product concept was found as very important for consumers, wholesalers (mean rating 4.00), companies–users (gastronomy) (mean rating 3.50) and local retail chains (mean rating 3.33).
- Rapid response to customer signals on the presented offer was considered as extremely important for companies–users (gastronomy) (mean rating 4.50), and as very important for consumers, wholesalers and local retail chains (mean rating 4.33).

Analyzing the assessment of the validity of the features of the offer for particular customers (Table 1 and Figure 2), it is clear that:

- For consumers as very important are considered rapid response to customer signals on the presented offer, the degree of modernity of the product, i.e. its innovativeness, compliance with fashion trends, more frequent than competitors introduction of new products to the market, more frequent than competitors product innovation, highlighting of products against competitors' products, the motives for taking the decision to purchase, market trends and market structure, maintaining contacts with customers in the phase of creating the product concept, maintaining contacts with customers in the implementation phase of the product concept while as quite important is found products' manufacturing based on the use of market research results relating to the needs and expectations of consumers.
- For companies–users (gastronomy) as extremely important is considered rapid response to customer signals on the presented offer. In the same time, the cooperatives' executives pointed out that the degree of modernity of the product, i.e. its innovativeness, more frequent than competitors product innovation, maintaining contacts with customers in the phase of creating the product concept, compliance with fashion trends, highlighting of products against competitors' products, and maintaining contacts with customers in the implementation phase of the product concept are considered as very important, while more frequent than competitors introduction of new products to the market was found as quite important.
- For wholesalers as extremely important are considered highlighting of products against competitors' products, whereas as very important were found maintaining contacts with customers in the phase of creating the product concept, rapid response to customer signals on the presented offer, the degree of modernity of the product, i.e. its innovativeness, compliance with fashion trends, products' manufacturing based on the use of market research results relating to the needs and expectations of consumers, the motives for taking the decision to purchase, market trends and market structure, maintaining contacts with customers in the implementation phase of the product concept, more frequent than competitors introduction of new products to the market, and more frequent than competitors product innovation.
- For local retail chains as very important are considered rapid response to customer signals on the presented offer, the degree of modernity of the product, i.e. its innovativeness, compliance with fashion trends, highlighting of products against competitors' products, products' manufacturing based on the

Figure 2. The validity of the features of the offer for particular customers in the area of the innovation and R&D in the assessment of dairy cooperatives from the świętokrzyskie province



Source: author's own research.

use of market research results relating to the needs and expectations of consumers, the motives for taking the decision to purchase, market trends and market structure, and maintaining contacts with customers in the phase of creating the product concept, whereas as quite important were considered more frequent than competitors introduction of new products to the market, more frequent than competitors product innovation, and maintaining contacts with customers in the implementation phase of the product concept.

Conclusion

The paper shows an analysis of the validity of the features of the offer for customers in the area of the innovation and R&D in the assessment of dairy cooperatives from the świętokrzyskie province. Taking into account the respondents' answers it is clear that cooperatives have such customers as consumers, companies—users (gastronomy), wholesalers and local retail chains. Their customers are not independent retail grocery stores, large retail chains, intermediary agents in food trade, other dairies, and other institutional purchasers. Cooperatives' representatives assessed that for their customers the most important feature of the offer is rapid response to customer signals on the presented offer, and the least important of all indicated features of the offer is more frequent introduction of new products to the market than competitors.

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Sylvia Kowalska, Sylvia Łęgowik-Świącik, Małgorzata Kuras
Czestochowa University of Technology, Poland

THE QUALITY OR THE PRICE – THE FACTORS BUILDING COMPETITIVE POSITION OF MSMEs ON THE MARKET

Summary

The feature of market economy is dynamic development of micro-, small and medium enterprises (MSME). These enterprises constitute 99.8% of all enterprises, they generate about 50% of GDP. The competitiveness of these enterprises depends on many factors but most of all, on the quality and the price. However, one should not forget about other equally important factors such as the quality of customer service, narrow field of expertise, or the ability to adapt to requirements of customers, building market competitive position of MSMEs. The aim of the paper is the analysis of the above factors based on the MSME sector, taking into account PKD (Polish Classification of Activities) and research years.

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Introduction

Nowadays, the market amounts to the explosion of complexity of economic processes, which requires from SME the processing of a large amount of information and data to operate efficiently and be competitive on the market.

The competitiveness of the company is affected by many factors, among others¹: prices of products and services, quality of products and services, location of the company, quality of customer service, long-term relationships with customers, innovative nature of the product or service, modern methods of business management, level of knowledge and skills of employees.

The aim of the paper is the analysis of factors determining the competitiveness of MSMEs. To achieve the presented objective there has been used the information based on the research by Confederation Lewiatan in the framework of “Monitoring the condition of the MSME sector 2014”.

¹ Z. Przybysz, M. Dopieralska, *Analiza poziomu i determinant konkurencyjności MŚP w regionie sieradzkim*, Zeszyty Naukowe Politechniki Łódzkiej, No 1091 „Organizacja i Zarządzanie”, vol. 46/2010, p. 49, I. Turek, *Bezpośrednie inwestycje zagraniczne w Polsce a konkurencyjność przedsiębiorstw na rynku polskim*, materiały konferencyjne nt: *Wybrane uwarunkowania działalności ekonomicznej*, scientific editor: R. Pajda, Kraków 2000, pp. 377–379.

Competitiveness of enterprises and its determinants

In the era of globalization, competitiveness has become an essential condition of development and survival of enterprises. Competitiveness may be understood as the system of processes, activities and states by means of which the enterprise aims at the achievement of sustainable competitive advantage².

M.J. Stankiewicz understands it as the ability of the enterprise to achieve objectives effectively in the conditions of the competition with other participants of the market³. OECD defines competitiveness as “the ability of enterprises, industries, regions, states or transnational areas to generate relatively high income from production factors and high employment rate, based on solid foundations, as a result of the exposure to international competition”⁴.

The European Commission uses a similar definition assuming that competitiveness is “the ability of the economy to provide citizens with high and growing standard of life as well as high level of employment, based on stable grounds”⁵.

In these definitions competitiveness is understood more deeply – it allows for considering not only the traditional quantitative measures but also qualitative factors, connected with the structure of the economy, technical progress or the functioning of markets of products and production factors.

S. Flejterski defines competitiveness as a long-term ability to design, manufacture and sell products whose prices, quality and other advantages are more attractive than relevant properties of goods offered by both domestic and foreign competitors⁶.

An important issue is, at this point, a dual nature of the term of competitiveness of the enterprise, therefore, competitiveness *ex ante* and *ex post*. Competitiveness *ex ante* is “the future (prospective) competitive position. It is defined by relative (i.e. referred to the abilities of business rivals) ability of the enterprise to compete in the future, i.e. by its competitive potential”. On the other hand, competitiveness *ex post* is “the present competitive position”⁷.

The factors creating competitiveness of enterprises can be divided according to the following criteria⁸:

1. market nature:
 - a. competitive factors of market nature,
 - b. competitive factors of non-market nature,
2. the nature of the decisions taken:
 - a. competitive factors, external in nature,
 - b. competitive factors, internal in nature.

The adoption of the market nature criterion of factors creating competitiveness of enterprises allows for isolation of market determinants that may include:

1. volume of market offer, therefore, amount of goods or/and services offered on the market,
2. prices of goods or/and services,
3. quality of goods or/and services,
4. conditions of sale.

² *Firma w otoczeniu globalnym*, scientific editor: J. Bogdaniecka, Wyd. Dom Organizatora, Toruń 2006, p. 17, more: R. Borowiecki, B. Siuta-Tokarska, *Wyzwania i dylematy społeczno-gospodarcze Polski w procesie transformacji*, Wyd. Dom Organizatora, Toruń 2012, pp. 209–2015.

³ M. J. Stankiewicz, *Konkurencyjność przedsiębiorstw. Budowanie konkurencyjności przedsiębiorstwa w warunkach globalizacji*, TNOiK, Dom Organizatora, Toruń 2005, p. 36.

⁴ *Globalisation and Competitiveness: Relevant Indicators*, STI Working Papers 1996, No. 5, OECD, Paris, p. 20.

⁵ *European competitiveness report 2001*, European Commission, Luxembourg 2001, p. 19.

⁶ W. Świtalski, *Innowacje i konkurencyjność*, Wyd. Uniwersytetu Warszawskiego, Warszawa 2005, p.166.

⁷ M. Gorynia, *Luka konkurencyjna w przedsiębiorstwie a przystąpienie Polski do Unii Europejskiej*, „Gospodarka Planowa”, No. 10/2000, p. 49.

⁸ H.G. Adamkiewicz–Drwiłło, *Uwarunkowania konkurencyjności przedsiębiorstwa*, PWN, Warszawa 2002, p. 130.

The above catalogue of market determinants, competitiveness of enterprises, is complemented by Z. Pierścionek with the factors such as⁹:

1. functions of the offered goods or/and services,
2. newness of the product,
3. degree of distinction of the product and the company against competitors' offers,
4. the opportunity to influence the product, forms of delivery and payment by the recipient,
5. duration of transaction completion, delivery,
6. intensity and quality of promotion,
7. availability of goods,
8. scope, quality and costs of service, scope and quality of warrantee,
9. the scale of presence in a particular geographical market,
10. size of the enterprise and prospects for development.

The level of competitiveness of the enterprise is also conditioned by non–market factors. Among non–market determinants, technical progress, which is one the most important factors influencing the way of conduct of the enterprise, deserves a special attention.

In accordance with the second criterion, referring to the nature of the decisions taken, competitiveness of enterprises is influenced by external conditions referring to the environment of the examined enterprise and internal conditions connected directly with the company¹⁰.

External conditions of competitiveness are specified by permissions resulting from the application of different types of standards (technical, ecological, legal) in compliance with which the enterprise must run its activity. On the other hand, internal factors constitute the nature of the enterprise property, its internal system of organization and management, strictly connected with the system of HR management, production decisions and effectiveness of the applied methods of the company promotion.

Development potential of MSMEs and their strategic objectives

The share of micro–, small and medium enterprises (MSMEs) in the total number of enterprises has not changed for years and amounts to 99% of the total number of companies operating in Poland. The absolute majority (96%) in this group is micro–enterprises (up to 9 employees), then, small enterprises (10 to 49 employees), medium ones, and subsequently, large companies.

MSMEs operate in all the markets where they can find customers for the products and services they offer. However, it does not mean that every market, every sector has similar prospects for development. Almost 1/4 of MSMEs assess the industries they operate in as declining ones, characterized by declining markets and lack of opportunities for reversing this trend. Figure 1 shows the opportunities for growth in industries the companies operate in.

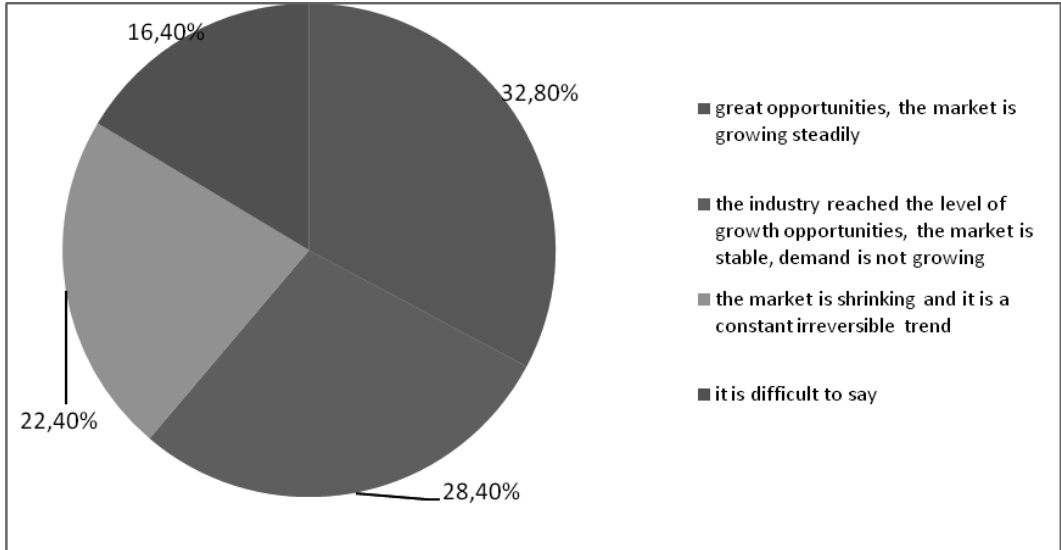
While analyzing the whole MSME sector, in every section of the economy, it can be observed that that there are enterprises that consider the market they operate in as big and growing. Totally, they amount to almost one third of all MSMEs. This means that they regard the space where they exist as the market that is developing and there are market niches that provide the opportunity for growth. It is also possible to come across the enterprises that assess the same market as the shrinking one. This means that not all enterprises handle the situation on the market – since where some notice the prospects for development and the growing market others express the opinion that the market is shrinking. This results from internal diversity of these markets, insufficient management competences essential for identification of opportunities and their effective use, and also unwillingness to take risk. Almost 1/4 of

⁹ Z. Pierścionek, *Rynkowe determinanty konkurencyjności przedsiębiorstw*, „*Ekonomika i Organizacja Przedsiębiorstwa*”, 2005, No 4, pp. 3–4; Z. Pierścionek, *Strategie konkurencji i rozwoju przedsiębiorstwa*, PWN, Warszawa 2006, p. 169.

¹⁰ H.G. Adamkiewicz–Drwiło, op. cit., p. 148.

micro-enterprises run their business activity on shrinking markets and another 1/6 of micro-companies are not able to assess the situation on the markets they operate in.

Figure 1. What are the opportunities for growth in the industry the company operates in?(2014)
(% of MSMEs)



Source: M. Starczewska-Krzysztozek, *Finansowanie działalności rozwoju*, The Report from the results of the research prepared by Confederation Lewiatan in the framework of the project “Monitoring the condition of the MSME sector, 2014”, Lewiatan, Warszawa 2014, p. 34.

The growth in the industry in which MSMEs operate must be sought in the companies functioning in the section of real estate activities, which is shown in Table 1, since most companies from the sector of real estate activities assessed the market they operate in as big and growing (53%) but, simultaneously, nearly 1/3 of companies from this section of the economy considered their market as stable and did not expect growth in demand there. Therefore, the situation in this section of the economy was diversified and, undoubtedly, it resulted from which “part” of the section the analyzed companies operate in. Real estate activities are the activity related to buying and selling of real estate, rental and management of real estate, real estate brokerage. Rental and management of real estate is an active or even very active part of business, also at the time of economic downturn. On the other hand, buying and selling of real estate and also real estate brokerage declines in such a period. The assessment of the potential of the real estate market by MSMEs indicates that in the coming years they notice great opportunities for development of this part of the economy. This means that rental and management will be definitely accompanied by real estate brokerage.

Table 1. Opportunities for growth in the industry the company operates in (% of MSMEs by the section of the economy in MSMEs 2014)

PKD (Polish Classification of Activity)	What are the opportunities for growth in the industry the company operates in?			
	great opportunities, the market is growing steadily	the industry reached the level of growth opportunities, the market is stable, demand is not growing	the market is shrinking and it is a constant irreversible trend	it is difficult to say
	%	%	%	%
Agriculture, hunting, forestry, fishing	33.4	48.9	8.0	9.7
Manufacturing activities	36.6	27.2	16.9	19.3
Construction	35.7	30.5	16.7	17.1
Wholesale and retail trade	28.5	27.0	32.1	12.4
Transportation and storage	27.8	8.26	32.4	13.3
Accommodation and food service activities	31.0	18.1	18.9	32.0
Information and communication	44.7	43.9	43.9	6.3
Real estate activities	53.0	31.6	4.9	10.6
Professional, scientific and technical activities	31.5	26.7	17.4	24.5
Human health and social work activities	43.7	25.2	0.7	30.4

Source: M. Starczewska-Krzysztozek, *Finansowanie działalności...*, op. cit., p. 31.

The companies from the section of information and communication assessed the development opportunities of their market similarly but a little bit more cautiously – there are almost no enterprises claiming that the market is shrinking. More than 40% of the companies from this section of the economy found the information and communication market big and growing and the similar percentage – stable. This dichotomy, as in the case of the companies from the section of real estate activities, resulted from a different nature of the activity of the analyzed companies. Probably, some of telecommunications companies of the MSME sector, publishing companies or the ones dealing with film production found the market stable. On the other hand, the companies connected with IT and information activities found the market growing.

The situation in the section of human health and social work activities was different from the one in two sections of the economy mentioned above. Almost 1/3 of the companies operating in this market were not able to assess its development opportunities. At the same time, practically there were no companies (0.7%) that found that market shrinking. This is obvious since the ageing population and also rising incomes of households allowed to forecast growth in demand for services related to human health and social work. The entrepreneurs that were not able to assess the situation on this market undoubtedly ran their companies on the basis of the current demand, they did not analyze market trends, they were not interested in a long-time perspective.

In the opinion of the entrepreneurs from the MSME sector, the most difficult situation seems to refer to the section of transport and storage, wholesale and retail trade. In both sections, almost 1/3 of the companies found the market shrinking and they acknowledged that it was a constant irreversible trend. However, in both sections, there were companies that noticed development potential of the market. In the case of trade companies of MSMEs this was surely the result of fears connected with the development of large commercial chains.

In turn, the companies from the section of accommodation and food service activities, i.e. 1/3 of them did not know how to assess development opportunities of the industry they operate in. It is hardly surprising since the number of tourists decreased in 2009–2013 and there was a decline in households expenses for restaurants and hotels. The growing, year by year, number of foreign tourists did not dispel that uncertainty and this did not allow to assess clearly development potential of the hotel and catering market.

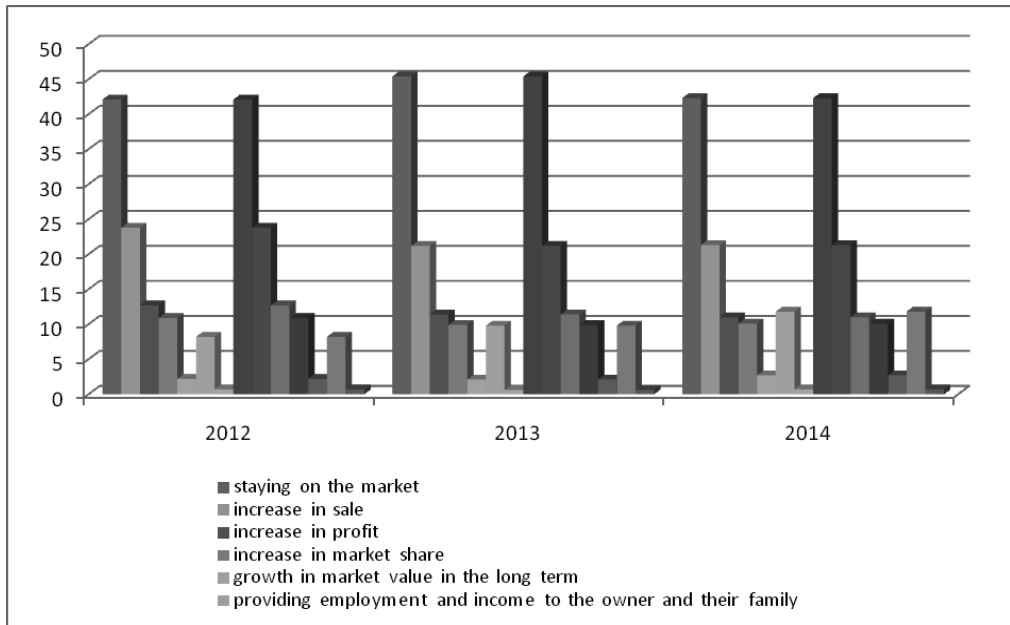
Development potential of enterprises is influenced not only by external factors, including the market and the industry they operate in. The internal factors are also important, among others, strategic objectives that the companies establish and the tools to achieve them. Moreover, the awareness of what the company aims at in the medium and long term is of the key importance for efficiency and effectiveness of its activities. Each enterprise, even the smallest one, should therefore have a specific strategic objective. This enables decision-making in all areas of the activity of the company – it allows to specify what products the company will provide to the market, who its customer will be, what market it wants to operate in, how it wants to build its competitive advantage, what resources it will need for this and how to finance them. Therefore, the strategic objective allows to focus on key issues and it enables the use of emerging opportunities.

In the subsequent Figure 2 it is noticeable that the primary strategic objective in 2012–2014 among MSMEs was, most of all, staying on the market, followed by an increase in profits, which means that more companies set themselves more pro-development and pro-growth targets. The group of enterprises concentrating on an increase in the volume of sales was relatively large and stable (more than 20%). These are companies set to expansion, searching for the opportunities for growth through production and sales. Increasing market share was not easy, therefore, only 10% of MSMEs declared such a strategic objective.

Relatively few owners of the companies also treated their business activity as a workplace and the source of income for themselves and their families (8–11.8%). Such companies were not generally expansive, they did not search for market opportunities, since this increased the risk and could threaten the achievement of the objective. Therefore, almost 40% of MSMEs defining the strategic objective in this manner operated on the stable market.

Summing up, among MSMEs there constantly dominated the companies that aimed at staying on the market. This did not mean that they were not able to or did not want to see the opportunities the economy provided or were afraid of opening to the external world or even going beyond the region.

Figure 2. What is the primary strategic objective of MSMEs in % in 2011–2013?



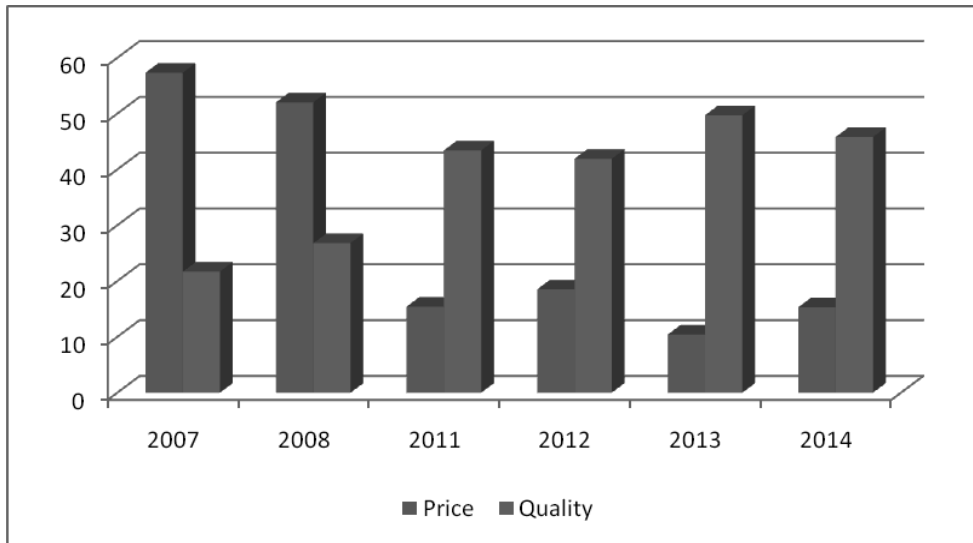
Source: M. Starczewska-Krzysztozek, *Finansowanie działalności ...*, op. cit., p. 37.

The factors building competitive position of MSMEs

For the whole period of market economy in Poland until 2008 MSMEs built their competitive position on the price. The significance of the quality of products and services was growing and the percentage of MSMEs that declared that they built their advantage on the market on the product and service quality was relatively low. The economic slowdown that forced companies, including MSMEs, to higher activity on foreign markets made a radical change. More than 40% of MSMEs, wishing to compete, refer to the quality of products and services nowadays, only 10–15% – to the price. Obviously, the price is in the group of three most important factors that build competitive position of companies – along with the quality of products and services and the quality of customer service –however, its primary importance has been significantly reduced, which is broadly illustrated in Figure 3.

On the other hand, still few enterprises build their competitive position on the market by introducing new, innovative products and services or using modern technologies or referring to the results of cooperation with research and development centers. It should be underlined that the factor which is significantly more important for micro–enterprises than for larger companies is the quality of customer service and location since they mainly operate on local markets, they have local customers of products and services and these expect good quality of products at a competitive price and good service within a rather short distance from the place of residence or business activity. The ability to meet customers' requirements is equally important for MSMEs, which helps build competitive advantage on the market since it allows to provide non–standard products to customers, addressed directly to them and taking into account their characteristics and needs.

Figure 3. Factors determining competitiveness of MSMEs in 2007–2014 (%)



Source: M. Starczewska-Krzysztozek, *Finansowanie działalności...*, op. cit., p. 52.

The variety of factors for building competitive position on the market looks slightly different in MSMEs operating in different sections of the economy, which is presented in Table 2.

The above data indicate that in all the sections of the economy, apart from information and communication and real estate activities, where the quality of customer service is aimed at, there dominates the model with the clear advantage of the quality of products, services and the price. In most sections, except for agriculture and hotels and catering, more and more MSMEs decide on including product innovation in building competitive position on the market. On the other hand, more and more companies from traditional sectors (construction, trade, transportation, hotels and restaurants and also real estate services) are planning to strengthen the significance of the price in building competitive position on the market in the coming years.

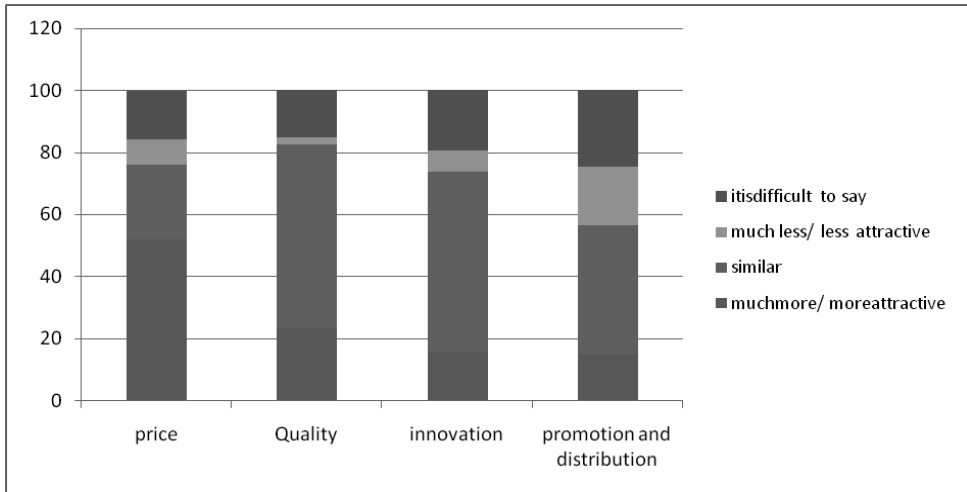
A decline in the significance of the price in building competitive position by MSMEs and an increase in the importance of the quality amounts to the assessment of products and services in Polish MSMEs compared to their equivalents offered on the markets of the EU countries, which is included in Figure 4.

Table 2. Factors determining competitiveness of MSMEs in 2014 over the next 3 years by the section of the economy (%)

PKD (Polish Classification of Activity)	Quality of products/ services		Price of products/ services		Quality of customer service		Narrow field of expertise		Ability to adapt products/ services to customers' requirements		New innovative products/ services	
	2014	the next 3 years 2014	2014	the next 3 years 2014	2014	the next 3 years 2014	2014	the next 3 years 2014	2014	the next 3 years 2014	2014	the next 3 years 2014
	%	%	%	%	%	%	%	%	%	%	%	%
Agriculture, hunting, forestry, fishing	80.5	86.5	66.2	62.9	39.7	52.6	18.5	17.6	34.8	39.3	10.0	7.3
Manufacturing activities	85.7	80.7	60.7	60.0	45.5	42.0	16.2	14.4	40.2	41.9	13.2	18.0
Construction	75.7	78.9	67.2	67.5	39.4	46.3	18.6	19.1	42.7	32.5	9.1	11.2
Wholesale and retail trade	61.6	60.6	64.5	66.4	65.0	63.5	13.7	9.7	24.6	23.9	13.7	16.2
Transportation and storage	57.4	56.9	70.3	75.5	73.3	63.4	10.4	12.1	32.3	25.4	1.9	9.9
Accommodation and food service activities	77.5	78.1	51.4	56.1	78.1	71.3	6.7	5.8	36.5	34.1	5.8	2.2
Information and communication	55.8	60.8	41.2	32.5	55.4	63.4	50.3	36.5	44.6	44.4	1.5	12.0
Real estate activities	54.9	43.6	54.4	56.8	67.8	73.7	12.4	11.2	41.1	44.5	0.2	4.6
Professional, scientific and technical activities	63.1	63.3	42.8	40.6	57.9	54.2	36.8	33.9	28.0	29.9	10.1	13.5
Human health and social work activities	88.5	88.9	21.4	19.9	58.5	65.5	47.2	32.6	18.2	11.9	13.8	19.7

Source: M. Starczewska-Krzysztozek, *Finansowanie działalności...*, op. cit., p. 55.

Figure 4. Comparison of products/services of the company to the relevant products/services sold in the EU with respect to the quality, price, innovation and promotion and distribution in 2014 (% of MSMEs)



Source: M. Starczewska-Krzysztozek, *Finansowanie działalności...*, op. cit., p. 55.

Micro-, small and medium companies highly assess their ability to compete with the price. However, MSMEs find their products and services at least the same as their equivalents in other EU countries with respect to the quality. There are more of those than the ones who assess their price competitiveness in this way. Admittedly, the advantage referring to the quality is still relatively weak – only 23% of the companies possess it, in the opinion of MSMEs.

Summing up, in the opinion of most MSMEs, their product offer could compete on the markets of the EU countries – with respect to the price, quality and also with reference to innovation. The companies are able to manufacture products and services, however, they still need to put a lot of efforts to sell them.

Conclusion

Small and medium enterprises are the most dynamically developing sector of business activity which significantly brought about the current economic success. Small economic entities, most of all, develop their activities locally, however, some of them play an important role in the regional development and even they effectively compete on international markets, bringing about an increase in export and contributing to globalization processes.

Summing up, small and medium companies are considered as the stimulator of economic development and their functioning is the manifestation of healthy competition and it reflects entrepreneurship of the society¹¹. Large entities most frequently attempt to unleash the qualities of entrepreneurship by the application of the principles of formal management.

All in all, the SME sector stimulates the economic growth of the country by activation of innovation processes and, consequently, it modernizes the industrial structure, and also, generates new jobs and eases social tensions. The key to success, at present and in the next 3 years, in the opinion of MSMEs,

¹¹ A. Skowronek–Mielczarek, *Małe i średnie przedsiębiorstwa. Źródła finansowania*, C.H. Beck, Warszawa 2003, p. 6.

is the quality of products and services and, subsequently, the price, that is business models focused on the product, not on marketing activities, which are important, particularly in the competition with the EU products/services.

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Marzena Frankowska
University of Szczecin, Poland

CLUSTER-SOURCING – THE CONCEPT OF ENHANCING INTERNATIONALIZATION AND EFFICIENCY OF CLUSTER COMPANIES

Summary

The clusters can be perceived as a whole value chain (supply chain) or as a link of value chain. The paper focuses on the concept of cluster-sourcing as a tool of internationalization the cluster companies by entering in global supply chain. It is presented as the response to the varied requirements of the development of local enterprises in the modern and very competitive economy. First of all, it takes into account, the impact of globalization on the possibilities for the internationalization and effective functioning of organizations representing regional economy (clusters). On the other hand, indicates that the pursuit of the development of enterprises and increase their internationalization, it is possible not only by the efforts of the companies themselves and cluster organizations, but also through conscious regional authorities responsible for managing the policies and the distribution of funds. The paper presents the possible use of cluster-sourcing in the context of global supply chains and the approach of internationalization and efficiency improvement for cluster enterprises.

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Introduction

The contemporary economy is characterized by high dynamics of changes and a rapid effect of their spreading on a large, international scale. It causes the interdependence of phenomena and may lead to surprising consequences, where a situation connected with a regional economy determines decisions in the strategies of global companies. The concept of cluster-sourcing is a response to numerous phenomena and processes characterizing the contemporary economy. It allows to create common ground for both globalization and regionalization of supply chains, performance of businesses from the SMEs sector with transnational corporations and it integrates the competitive and cooperative actions. It is a concept often enabling the connection of the positive effects of the large scale with the attributes of the functioning of

small enterprises causing innovativeness, high quality of production and effective competition. However, implementing this concept requires the cooperation of a wide range of different actors representing not only enterprises and the cluster organization, but especially regional authorities. In this case, improving business efficiency is influenced, not only by globalization processes but also by regional policy, among other things by the intentional creation of the appropriate environment for investors.

Simultaneously, the literature on this subject as well as empirical evidence indicate that the understanding of the substance and significance of cooperation and spatial proximity for the division of labor in contemporary industrial activities as well as the quality and efficiency of production processes are rather vague.

Therefore, the aim of this paper is to present the concept of cluster-sourcing within the context of changes taking place in the contemporary economy as well as to indicate the possibilities of improving internationalization and efficiency of businesses concentrated in clusters. This concept might be interesting due to the fact that internationalization is often perceived as too risky for small and medium enterprises.

The importance of clusters in the contemporary economy

Today's business environment is characterized by high dynamics resulting among other things from the processes of globalization and internationalization becoming more intense. Not only enterprises participate in these processes but all actors connected with economic development, among others: regional authorities, training and research centers as well as business environment institutions. In search for more effective ways of functioning on the market, the creation of new organization forms is observed, both within the very enterprises and the ones where differentiated market actors are the participants, as exemplified by the clusters.

The clusters participate in economic life and show higher and higher market activity to an increasing extent.

Citing a classic definition of M. Porter, the cluster is described as "a geographic concentration of mutually interconnected companies, specialized suppliers, service providers, companies operating in related sectors and associated institutions (e.g. universities, standard setting bodies, industry associations, support institutions) in particular fields, competing with each other, but also cooperating"¹. Therefore, the term 'cluster' refers to a group of enterprises or other institutions which are located in a given geographic region. They appear as a result of endogenic conditionings of a given geographic area, such as national resources, appropriate location, traditions creating so called "critical mass" of business entities attracting other entities.

In response to the positive effects of clusters functioning, cluster initiatives appeared as projects of clusters development, or organizations of the cluster character. Economic benefits generated by the cluster may be analyzed in a few dimension². The following can be included as the most important ones³:

- Enabling the achievement of higher company productiveness. Companies may work with higher efficiency, based on more specialized cluster assets and suppliers having shorter reaction time, compared with the situation when the enterprise works individually.
- Greater ease in building positive relations within the scope of the cluster by companies and training and research centers, results in more matched system of education and innovation development processes.

¹ M.E. Porter, *Porter o konkurencji*, PWE, Warszawa 2001, p. 246.

² M.E. Porter, *On Competition*, Harvard Business School Press, Boston 1998, in: Ch. Ketels, O. Memedovic, *From clusters to cluster-based economic development*, „International Journal Technological Learning, Innovation and Development”, 2008, Vol. 1, No. 3, p. 375.

³ Ch. Ketels, O. Memedovic, *From clusters...*, op. cit., p. 379.

- The occurrence of higher level of entrepreneurship expressed in creating new business entities. It is a favorable place for start-ups being the entities dependent to larger extent on external suppliers and partners, since they can find an entire diversity of companies.

Moreover, the cluster facilitate the distribution of costs of the entrepreneurs failure since they can find support in the local job market, where numerous companies from a particular branch of industry operate. The results presented in the literature on the subject prove among other things that⁴:

- the greater the proportion of work places in a regional clusters, in which the region is highly specialized (greater concentration of work places in a regional cluster than on the national market), the higher the average incomes in the region;
- the more specialized the cluster operating in a given region is, the higher the incomes in the regional cluster in relation to the average income in national clusters
- the higher the regional employment rate in clusters, the higher the average increase of incomes in the region in a given period.

The growing importance and popularity of the cluster concept together with the influence of clustering on the economic development has led to framing the policy of cluster supporting, which in recent years has been promoted primarily by OECD, as a concept of cluster-based economic development policy⁵.

Internationalization of cluster and cluster enterprises

According to Hausmann and Rodrik, the shift towards international markets in a cluster is recognized as a process starting with the “discovery” of export and its adoption by one or several innovative firms and furthermore, in case the experience is successful, the diffusion of this business experiment among other firms in the cluster⁶. This conceptualization of cluster business behavior appears yet much too simplistic. The process of developing international relations between clusters and their companies is more complex and starts before exporting contracts have been concluded.

Therefore, the following three main stages of cluster cooperation may be distinguished in the course of time and as trust between the different actors is built (Table 1).

According to the findings from TACTICS project, the internationalization of cluster organizations covers a range of activities that can produce several benefits for the businesses in the cluster, especially SMEs, and for the region and country in which the cluster is located. These include⁷:

- Access to knowledge, to use in new products and services,
- Access to new markets,
- Access to key infrastructure,
- Access to new partners for collaboration,
- Raising profile,
- Attracting mobile Foreign Direct Investment.

⁴ M.E. Porter, *The economic performance of regions*, „Regional Studies”, 2003, Vol. 37, Nos. 6/7, pp.549–578.

⁵ *Klastry – polityka rozwoju gospodarczego oparta na klastrach*, Ministerstwo Gospodarki, <http://www.mg.gov.pl>

⁶ R. Hausmann, D. Rodrik, *Economic development as self-discovery*, „The Journal of Development Economics”, 2003, 72 (2), pp. 603–633.

⁷ <http://www.eca-tactics.eu/page/tactics-final-reports>.

Table 1. Characteristics of the cluster cooperation stages

Stages of cluster cooperation	Activities
Sharing of cluster experiences and knowledge	The objective is to develop a culture of mutual exchange which involves sharing experiences and knowledge. Companies and other cluster actors get involved, but cooperation is kept informal. Participation in cluster conferences, workshops or brokerage events is characteristic for activities at this stage.
Cluster cooperation	The second stage considers a cooperative culture by setting up for example a joint proposal. Here, cooperation tends towards coordination with an operational purpose. The objective is to build critical mass in order to carry out joint research projects or to design innovative products.
Cluster community	The third stage involves more trusted cooperation. A community culture is acquired and a permanent consortium is set up. The concept of intercluster as an association of clusters within a specific interregional or transnational area is here in its most developed and complete form. The objective is to promote synergies around high-value-added products and services, and thereby contribute to the emergence of European industrial projects.

Source: author's own research based on: C. Bettendorffer, *Competitiveness in the European Union: is cluster cooperation the right way towards the future?*, A4019372, MIB 7 London, p.54.

Consequently, the analysis of cluster activities related to internationalization enables its distinction into two types:

- Internationalization directed at the foreign market, including active approach to supply or distribution processes, as well as R&D cooperation, staff exchanges and mobility.
- Internationalization directed at the internal local market, included activities attracting Foreign Direct Investment.

The concept of cluster sourcing refers to the second type of "internal" internationalization connecting globalization, as well as small and medium local cluster enterprises.

The development of global manufacturing networks

In recent years, changes in supply chains which are directly related to the globalization process on sectors, focused on the abilities of companies to configure and coordinate their production activities and actions directed towards an increase in the added value globally, i.e. transcending national borders have also been observed⁸. Interestingly, the chains of these companies may be configured totally inside the very companies, which means their internalization. On the other hand, each of the realized function

⁸ G. Stonehouse, J. Hamill, D. Campbell, T. Purdie, *Globalizacja, Strategia i zarządzanie*, Wyd. Felberg SJA, Warszawa 2001, p. 24.

may be subject to particular, independent companies, which means externalization of the enterprise. Numerous interdependencies may exist between these two extreme states⁹.

It is a fact, that the globalization process enables transnational corporations (TNCs) to utilize resources located in various parts of the world. Therefore, a new term has appeared– global resourcing which may be defined as the decision-making process of transnational corporations aiming to find out which part of their activity should undergo allocation, where to, and who should perform it¹⁰.

As a result a change of geographic configuration of the obtained resources happens. However, T. Pakulska and M. Poniatowska-Jaksch call for understanding the term Global resourcing from a slightly wider perspective, i.e. as acquiring by TNCs properties of production factors and capacities abroad and gaining access to these resources/capacities. However, gaining access means that another (foreign) company remains the owner of the resources/capacities and TNC may only use them¹¹. Simultaneously, the development of global manufacturing networks, which are defined as a worldwide combination of interlinked functions and operations, organized by enterprises and actors other than companies, within which goods and services are manufactured and distributed has been observed. These networks, on the one hand, integrate companies (or parts of companies) into structures which blur the traditional organizational boundaries through a development of various forms of capital relationships or without any capital. On the other hand, participating in regional and national economies they are of utmost importance for their development¹². Owing to the companies functioning within the global manufacturing networks, various organization configurations allowing them to obtain both economies of scale and economies of scope become possible¹³. However, it appears that the economies of scale are achieved only in particular regions where intentionally created economic policy of a given region meets strategic needs of trans-local actors, i.e. the ones which operate within global manufacturing networks¹⁴. As it has been already stated, the changes happening in the modern economy, caused by the globalization processes do not only influence the development of the global manufacturing networks and global acquisition of resources by TNCs, but also make a significant impact on regional economy. Studying these impacts, or even controlled participation in them is difficult, since discontinuously territorial structures¹⁵ become the subject. Seemingly paradoxically, a clash of globalization and regionalization processes takes place here. However, the actors representing the regional economy, i.e. local authorities or cluster organizations may actively cooperate for the sake of mutual achievement of benefits from the market globalization, which is enabled by the concept of cluster-sourcing.

⁹ G. Stonehouse, J. Hamill, D. Campbell, T. Purdie, ... op. cit., pp. 145–146.

¹⁰ The *Emerging Global Labour Market: Part III – How Supply and Demand for Offshore Talent Meet*, McKinsey Global Institute, June 2005, p.14, <http://www.mckinsey.com> [in:] T. Pakulska, M. Poniatowska-Jaksch, *Korporacje transnarodowe a globalne pozyskiwanie zasobów*, Szkoła Główna Handlowa w Warszawie – Oficyna Wydawnicza, Warszawa 2009, p. 67.

¹¹ T. Pakulska, M. Poniatowska-Jaksch, *Korporacje transnarodowe ...* op. cit., p. 69.

¹² N.M. Coe, M. Hess, H. Wai-chung Yeung, P. Dicken, J. Henderson, *Globalizing' regional development: a global production networks perspective*, „Transactions Transactions of the Institute of British Geographers”,

^{NS} 29 468–484 2004, p. 471.

¹³ Ch. Bongard, D. Möller, A. Raimann, N. Szadkowski, U. Dubejko, *Instrumenty ekonomiczne w prawie konkurencji*, Urząd Ochrony Konkurencji i Konsumentów, Bonn –Warszawa 2007, pp. 51–53.

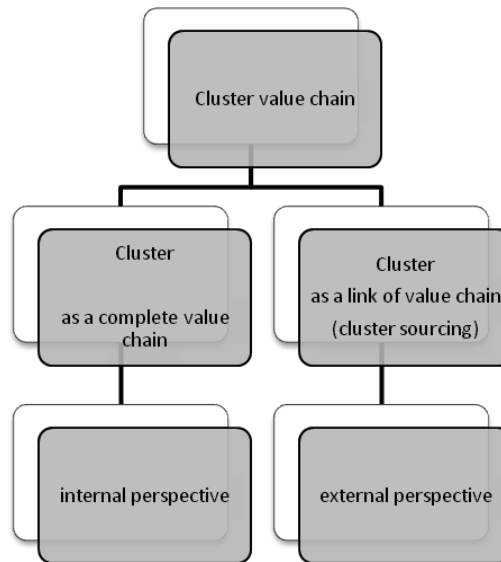
¹⁴ N.M. Coe, M. Hess, H. Wai-chung Yeung, P. Dicken, J. Henderso, *Globalizing' regional development...*, op. cit., p. 471.

¹⁵ *Ibidem*, p. 471.

The possibilities of utilizing cluster-sourcing in the context of internationalization of SME's and global supply chains

The concept of cluster-sourcing derives from the value chain model of M.E. Porter. Taking the cluster as the starting point for the analysis of the value chain, two perspectives of the analysis, which were presented in Figure 1 can be distinguished. Therefore, in the context of the analysis of the value chain, the cluster may be considered in two dimensions: as an “independent” value chain (internal perspective) and as a link of international value chains (external perspective).

Figure 1. Cluster perspective in the analysis of the value chain



Source: *Tworzenie wartości w klastrze*, scientific editor: M. Frankowska, PARP, Warszawa 2012, p. 55.

This distinction is important inasmuch as it indicates potential directions of the cluster development, i.e.:

- Organic development occurring as a result of internal cooperation of the cluster actors,
- Cluster development as a result of an expansion to external markets. However, external cooperation, and often internationalization connected to it, may happen as a result of the cluster actors joining international value chains, which triggers their expansion into external markets.

Therefore, a positive correlation of localization needs of TNCs and the cluster offer is indicated here. The localization decisions of TNCs are conditioned by prerequisites of such character¹⁶:

- External—e.g. technical and scientific progress, including the dynamic Internet development together with information technologies, national policy etc.,
- Segmental—functional—e.g. production and cooperation links, spatial allocation of individual segments of the production chain,
- Internal—e.g. company size, organization structure, operating strategy etc.

This corresponds to the observed trends, according to which manufacturing/industrial activities are becoming a more and more integrated network process, which results in the direct environment

¹⁶ T. Pakulska, M. Poniatowska-Jaksch, *Korporacje transnarodowe ...*, op. cit., p. 129.

becoming more critical towards the effects of this process. There is a tendency to move away from vertical relationships in the chain of created value in favor of the horizontal ones, including skill and knowledge transfer as well as unique tactical conditionings of the cooperation of companies. Due to this fact, the concept of cluster-sourcing, according to which the cluster offer may be a source of the supply of goods or services for a given supply chain, becomes particularly important, since the cluster may act as a kind of geographically concentrated link in the global value chain.

The phenomenon of producers' complementarity occurring in the cluster enables the customer (TNC) to reap the benefits in the form of so called „one stop shopping” which consequently allows, among other things, to lower the costs of transaction, leads to achieving economies of scale in distribution, and also increases response time (JIT), access to skilled labor. A cluster supply chain, according to the *supply chain operation reference* (SCOR)¹⁷, may be addressed in a phase context. It means that within this concept, the cluster may include one of the phases of the supply chain, for instance the supply phase (first and second-tier suppliers). TNCs enterprises make a decision regarding to what extent and which functions will be dispersed or concentrated in locations which offer particular benefits to them. In the literature on the subject, the case of the Benetton company which delegates a big part of its production to a group of manufacturers located in a particular region of Italy, as there is a high concentration of skilled employees (first and second-tier suppliers), is quoted. Simultaneously to the concentration of the manufacturing operations, Benetton's retail network spreads worldwide, because it wants to gain access to consumers in various countries¹⁸.

Thus, the operation of cluster companies within the concept of cluster-sourcing boosts the activation of internationalization on the internal local market. One can distinguished the following benefits for SMEs:

- Increasing the chance to obtain contracts by the presence in a group, as one of the entities of the cluster,
- Entry into foreign markets in an indirect manner,
- Risk reduction of foreign relations,
- Possible sharing of infrastructure for the implementation of joint contracts (eg. equipment, warehouses),
- Lower cost of business transactions (eg. transport),
- Transfer of knowledge and experience within the cluster.

A.S. Carrie claims that in the future, the competition will take place rather between regional clusters than individual enterprises and their supply chains. It results from the fact that a supply chain is built on the basis of a cluster initiative. It has more benefits resulting from the very nature of the cluster than a geographically dispersed supply chain. Thus he predicts that cluster supply chains will dominate individual industries in the future¹⁹.

Measures raising the efficiency of cluster enterprises

Measures raising the efficiency of cluster enterprises using the cluster-sourcing concept should be introduced at three levels corresponding to the three dimensions of functioning of these companies within the cluster initiative. Therefore, the possibilities to increase the efficiency of these enterprises occur chiefly in the micro, meta and meso economic dimension (see Table 2)²⁰.

¹⁷ www.supply-chain.org

¹⁸ G. Stonehouse, J. Hamill, D. Campbell, T. Purdie, *Globalizacja, Strategia i zarządzanie*, Wyd. Felberg SJA, Warszawa 2001, p. 24.

¹⁹ A.S. Carrie, *From integrated enterprises to regional clusters: the changing basis of competition*, „Computers in Industry”, Vol. 42 No. 2–3, pp. 289–98.

²⁰ It is possible to consider these issues also at the macroeconomic level. An investment in the infrastructure realized by the central authorities, which directly influences the operation conditionings of the cluster companies.

Table 2. Raising the efficiency of cluster enterprises in terms of the level of the results achieved

Level of analysis	Cluster perspective	Initiating actor
Micro	Enterprise	Management of enterprises
Meta	Cluster initiative	Cluster manager in cooperation with enterprises, local government units (SGU), R&D institutions
Meso	Cluster as an element of region economy	Regional authorities in cooperation with cluster manager, cluster actors, central authorities

Source: author's own research.

Moreover, it is worth noting that effective striving for achieving economic effectiveness ought to be realized in accordance with the principle of rational management, hence the activities should include limiting costs and increasing the operational income of the companies²¹.

Due to the limited volume of this chapter, the actions increasing the efficiency of cluster enterprises at the microeconomic level will not be presented here. This is particularly the case since at this level the individual enterprises initiate their actions and the range of possible methods and tools is very well described in the literature on the subject.

At the level of the cluster activity, as a purposeful organization of geographically and industrially concentrated actors (metasystem), a number of possibilities of both limiting costs of cluster actors and increasing their incomes exists. Examples of the undertaken measures of which the possibility of implementation ought to be verified each time, due to usefulness of a given tool for a particular situation of the cluster will be presented in Table 3 and Table 4, in the general form. Moreover, all measures have been divided into direct and indirect due to the way of operating.

Table 3. Selected measures directed at limiting the costs of cluster enterprises

Measures directly influencing the effectiveness of the cluster actors:
<ul style="list-style-type: none"> • joint purchasing of resources, materials, semi-products, components for production • joint purchasing of services for the purpose of executing orders e.g. transport services, certification • sharing infrastructure e.g. storage space, • introduction of ICT tools integrating cluster actors, facilitating their communication, increasing their competitiveness e.g. electronic trading platforms, EDI
Measures indirectly influencing the effectiveness of the cluster actors:
<ul style="list-style-type: none"> • Internal communication, building relations and the atmosphere of trust, • Joint participation in undertakings rising/optimizing the potential of enterprises e.g. training projects, study visits in companies, technological and innovative audits.

Source: author's own research.

²¹ O. Lange, *Ekonomia polityczna*, t. I, II, PWN, Warszawa 1980, p. 149.

Table 4. Selected measures directed at increasing the effectiveness of cluster companies

Measures directly influencing the effectiveness of the cluster actors:	
<ul style="list-style-type: none"> • the creation of a comprehensive offer as a cluster (basing on standardized parameters) • marketing activities aiming at making contacts with external entities, allowing the inclusion into their supply chains (B2B meetings, trade missions, participation in fairs, etc.) • stimulating internal cooperation of cluster actors in order to mutually subcontract services and, therefore, augmenting the offer of individual cluster actors • lobbying in local government units (SGU) 	
Measures indirectly influencing the effectiveness of the cluster actors:	
<ul style="list-style-type: none"> • Internal communication, building relations and the atmosphere of trust, • Sharing market information • marketing activities aiming at supporting SGU in the processes of attracting investors • developing B+R base in order to improve the quality of the services provided 	

Source: author's own research.

Finally, the ability of the region to create strong manufacturing networks requires not only the commitment of business entities but also local and regional and sometimes government authorities. The positive influence of SGU on cluster companies is chiefly connected with the following measures:

- realizing infrastructure investments,
- including interests of a given industry in the regional development (regional and intelligent specializations) in order to build a consistent and attractive cluster offer (cluster sourcing),
- activities aimed at attracting external investors, correlated with regional specializations development, cluster offer and market changes,
- initiating a dialog for the cluster development
- supporting the cluster activity on national and foreign markets.

Conclusion

The concept of cluster-sourcing is a response to the varied requirements of the development of small and medium local enterprises in the modern economy. Particularly, it may be an interesting solution for cluster SME's without experience and expertise required for internationalization. The concept of cluster-sourcing takes into account on the one hand, the impact of globalization on the possibilities for the effective functioning of organizations representing regional economy (Global resourcing). On the other hand, it indicates that striving for the development of enterprises and for the increase in their efficiency, is possible not only by the efforts of the companies and cluster organizations themselves, but also through conscious regional authorities responsible for managing the policies and the distribution of funds.

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PART IV



SELECTED PROBLEMS IN THE PRACTISE OF THE FUNCTIONING OF ENTERPRISES AND REGIONS

Beata Skowron-Grabowska
Czestochowa University of Technology, Poland

Marek Dziura
Cracow University of Economics, Poland

EU PROJECTS AND DEVELOPMENT OF TRANSPORTATION IN POLAND

Summary

In this paper, the problematic issues of the EU projects have been presented in the context of the development of transportation in Poland. The fundamental economic indicators characterizing the Polish economy and the effects of the implementation of the EU projects in the sector of transportation have been illustrated.

* * *

Introduction

EU projects constitute a significant aspect of the strategies of activities of all the member states. The projects of countries that were integrated into the EU in 2004 are of particular importance. In these countries, great differences in socio-economic development existed beforehand. The elimination of these differences became possible as a result of implementing EU projects. The effects of implementing the said projects may be evaluated on the basis of statistics illustrating the basic indicators of the realization of Objective 3 of the National Strategic Reference Frameworks. With regard to these indicators, the data relating to first and foremost the growth in the length of motorways and dual carriageways is worth mentioning. The aim of the projects focusing on the area of transportation was that of large growth in the level of road infrastructure. Likewise, the EU projects in the field of transportation have become an important premise of the development of the Polish economy in both global and regional terms. The fact of taking account of the problematic issues of sustainable transport in the EU projects is also worth emphasizing. Sustainable transport is one of the significant imperatives of the strategy of activities of enterprises, particularly transportation enterprises.

Areas of EU projects in transportation activities

EU projects take account of practically all socio-economic spheres. One of the most significant spheres undertaken in the first years of accession and subsequently Poland's membership of the EU was

that of transportation activity. The spatial dispersal of production and service enterprises, as well as the even more significantly dispersed location of consumers requires the execution of transportation activity. Simultaneously, a noticeably dynamic growth in trade exists, which on the one hand is the result of the growth in GDP, while on the other hand the progressing globalization.

Hence, the process of passing on even more attractive offers, as well as completely new products to the consumer in the context of their rising quality is evident. The afore-mentioned premises have a direct impact on the rising position and significance of the position and significance of transportation. Transportation enterprises as basic entities specializing in the movement of raw materials and finished goods require the existence of the appropriate infrastructure that facilitates the realization of their aims, but first and foremost optimizes their activities from the viewpoint of ensuring the appropriate servicing of clients.

Table 1. Indicators of realization of Objective 3 NSRF 2006–2013

Indicators	2006	2007	2008	2009	2010	2011	2012	2013	Assumed value in 2013.
Annual average pace of growth of GDP (%)	6.2	6.8	5.1	1.6	3.9	4.5	2.0*	1.6	5.2 6.1 average in 2011–2013
GDP per inhabitant in PPS (EU 25=100)	50	53	54	58	60	63			65.0
GDP per inhabitant in PPS (EU 27=100)	52	54	56	60*	63*	65	67		x
Final energy consumption of the market (kgoe/euro, at fixed prices in 2000)	0.259*	0.244	0.263*	0.230	0.224*	0.224			0.22
Average rate of investment (%)	19.7	21.6	22.3	21.1	19.9	20.2	19.2	18.4	24.0
Labour efficiency per employee (EU 25=100)	59.0	60.1	60.4	63.4	65.4	66.9			75.0
Labour efficiency per employee (EU 27=100)	61.1*	62.1*	62.3*	65.4*	70.0*	71.9*	73.5		
Annual influx of Foreign Direct Investment (FDI) in billions of USD	19.9*	23.7*	15.0*	13.0*	14.3*	20.7*	6.1	-6.1	10.0
Number of newly created workplaces (in thousands)	382.4	639.2	490.6	521.6	609.3	580.4	465.0	502.4	approx. 3500

Notes: (*) correction, (*) preliminary data, (*) results calculated in accordance with the new methodology and new basis of approximating data was marked in with navy blue colour. Since the third quarter of 2012, the approximation of BAEL results for the general population has utilized the data of the population of Poland from the age of 15 or more, originating from the balance calculated on the basis of the results of NSP (National Census) 2011. Apart from the scope of the research, there remain people that are away from the household, namely abroad or in collective household arrangements for 12 months or more (up to the second quarter of 2012, over 3 months). With relation to the changes implemented, in order to maintain the comparability of the time series, the data for the period 2010–2011 is also presented in a version that takes account of the changes implemented, thus they are not completely comparable with the data from the previous periods.

Source: *Report on realization in 2013. National Strategic Reference Frameworks for the period 2007–2013*, Ministry of Infrastructure and Development, August 2014, p. 27.

Transportation infrastructure constitutes a starting point in the activities of the enterprises of this sector. With regard to the rapidly growing demand for goods and services and the enormous growth in the quantity of the means of transport, we are currently dealing with an extraordinarily complex situation in terms of transportation. This complexity first and foremost results from the evaluation of the fundamental criteria in transportation activities, which is that of time itself. Infrastructure constitutes the fundamental factor which determines the timescale of transportation. Improvement in the level of the infrastructure is thus the possibility to shorten the timescale of transportation. The problems of transportation infrastructure should however be perceived in terms of the aspect of general economic categories (Table 1).

In analysing the fundamental indicators, it is essential to note that the primary economic categories of the period of 2006–2013 indicated various trends. In terms of the issue of the average annual pace of growth of GDP, it is possible to claim that with the high growth witnessed during the period of 2006–2008 the subsequent year, namely 2009, indicated the lowest pace of growth. The subsequent years were a continuation of the growth trend with the exception of 2013. Unequivocally, the increasing pace of growth was illustrated by the indicators of GDP per inhabitant of the EU. In the sphere of energy consumption, a slight drop was noted in the period under analysis. A favourable trend was witnessed in the sphere of labour efficiency, in which growth reached the level of 12% when comparing the year 2012 with the year 2006.

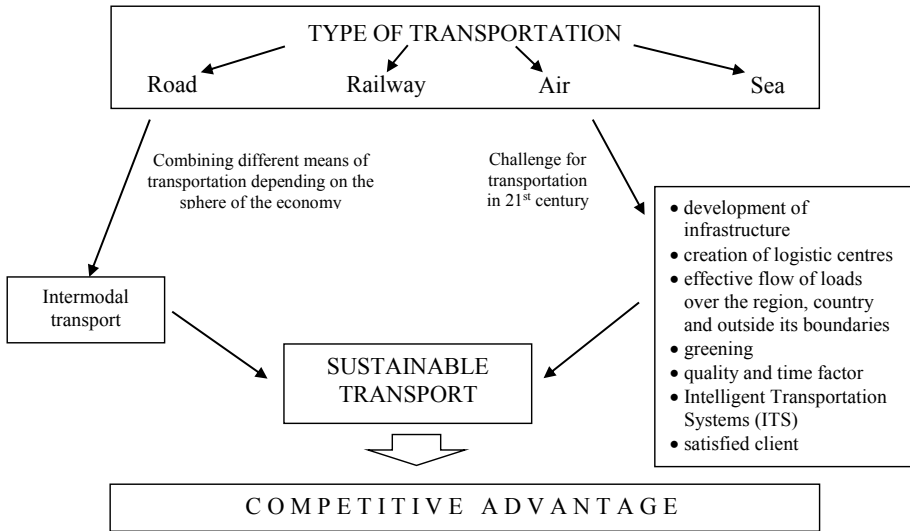
Great variability is however observed in the case of foreign direct investment and the number of newly created workplaces. The highest growth of these indicators was noted in 2007. Following their drop in 2008, a rise was witnessed in these indicators in the period of 2009–2011. The year of 2013 was unfavourable in the case of FDI, however the number of new workplaces was approximate to the average in the period under analysis. The characteristics of the fundamental economic categories with relation to the EU presented in Table 1 is aimed at illustrating the problem of the sphere in question and the need to support projects of significant economic and social fields.

Transportation enterprises in Poland that are located in the centre of Europe have the privileged position of realizing the strategic aims and tasks of the EU. The processes of globalization and consequently the growing quantity of goods transported, as well as the increasing number of passengers is the result of among other things, the favourable road, railway, air and sea routes at the disposal of Polish transportation enterprises. It is necessary to underline the fact that transportation constitutes a key factor in the modern economy. The skillful combination of the four aspects, namely the economic, social, spatial and ecological aspects, leads to the optimization of services in this sector, which by consequence causes the situation whereby the enterprises which chose that path are becoming competitive on a difficult global market. Globalization and competitiveness are thus the fundamental platforms for shaping the structures of the transportation system in the conditions of a market economy. Simultaneously, these conditions have a direct impact on the financial results of Polish transportation enterprises, while clients are guaranteed high quality in terms of the realization of all transportation tasks for the particular transportation branches.^{1,2} The way to achieving competitive advantage by transportation enterprises in light of the EU projects is presented in Figure 1.

¹ T. Ambroziak, D. Pyza, *Problematyka wykorzystania różnych form transportu w aspekcie infrastruktury transportowej, czas dostaw i poziom logistycznej obsługi klienta*, „Logistyka” 2011, nr 4, p. 33.

² D. Kempny, *Logistyczna obsługa klienta*, PWE, Warszawa 2001, p. 15.

Figure 1. Way of transportation enterprises towards achievement of competitive advantage on the market



Source: author’s own research.

In the area of these spheres, transportation is acknowledged to be a priority in the policy of supporting countries by the EU. The EU allocates a great quantity of funds towards the expansion of the transportation infrastructure. The high level of subsidies for the transportation infrastructure in the form of projects has facilitated the realization of objectives within the framework of the National Strategic Reference Frameworks (Table 2).

Table 2. Indicators of realization of Objective 3 NSRF 2006–2013

Indicators	Source of data	2006	2007	2008	2009	2010	2011	2012	2013	Assumed value of indicator in 2013.
Total length of motorways (km)	GUS/GDDKiA	663	663	765	849	857	1070	1365		1754
Total length of dual carriageways (km)	GUS/GDDKiA	297	330	452	522	675	738	1052		2555
Safety of road traffic (fatal accidents per 100,000 people)	GUS/ GKP	13.7	14.6	14.3	12.0	10.2	11.0	9.3		7.4
Transportation of passengers by city transport (millions of passengers)	GUS	4001	4078	4066	3779	3905	3890	3868		4225
Length of railway tracks adjusted to speed of 160 km/h and higher	PLK	1303	1307	1493	1568	1680	1857	1956	2027	1786

Source: *Report on realization in 2013. National Strategic Reference Frameworks for the period 2007–2013*, Ministry of Infrastructure and Development, August, 2014, p. 50.

The data presented indicates the dynamic growth in the level of transportation infrastructure. In the timescale under analysis, growth of almost triple in terms of the increase in the length of roads was witnessed, while over 7 times growth in terms of dual carriageways. Decisively lower growth was noted in the sphere of the length of railway tracks adjusted to speeds of 160 km/h or more. This increase amounts to approximately 150%. It is also a significant fact that the safety of road traffic has improved.

In the sphere of the transportation of passengers, the means of city transport do not display a uniform trend. In the period of 2006–2008, the amount transported was very similar. In 2009, a significant drop in this number was witnessed, before subsequently maintaining a similar level from 2010 to 2012. In 2013, a significant growth in the number of passengers availing of city transport was assumed. The aforesaid deliberations presented in the sphere of the general economic categories and the chosen indicators of the realization of the objectives in the sphere of transportation infrastructure constitute a starting point for the analysis and evaluation of the EU projects in the scope of transportation.

Evaluation of EU projects in the sphere of transportation

EU projects in the area of transportation have constituted a very important premise for the development of the Polish economy. Transportation infrastructure in the 1990s should be defined as insufficient, underinvested in and posing a significant barrier to the economic growth of Poland. At the beginning of the 21st century, the EU projects were prepared and initiated, which completely altered the level of transportation infrastructure. The said projects were realized in all types of transportation infrastructure in the areas of all the provinces. The scope, scale and value of these projects indicated the significant differentiation both in terms of type structure and territorial structure. With regard to the broad spectrum of the project activities and the restrictions of the herein paper, only a sample analysis of the chosen issues of the project activities in the area of transportation was undertaken.

The position of allocating a sum of 50 bn euro is worthy of mention, which has been allocated towards the realization of the transnational infrastructural links within the framework of the TEN-T network in the period of 2014–2020. The aforesaid proposition is an opportunity for Poland in the sphere of acquiring additional investment funds for the construction of trans-European routes. A particularly important fact is the taking into account of the plan of constructing the central European route of CETC-ROUTE65 in the network of green routes.³ The idea of green routes comes under the concept of sustainable transport.

It is worth noting the project of INTERCONNECT that is encompassed within the 7th Framework Program of the EU. The assumption of this project was to collect documents indicating the solutions aimed at the realization of the objectives of the policies of transportation focused on increasing the efficiency and reducing the impact on the natural environment. The total number of 67 documents were of a strategic nature, while 40 documents were identified with relation to intermodal transportation and the integration of passenger transportation. Unfortunately, it is emphasized that in the new member states of the EU the intermodal problems, together with the issues of passenger transportation occur sporadically. Hence, a threat to the flow of passenger transportation exists in the areas of neighbouring countries, while also in the whole market of services of the EU.⁴

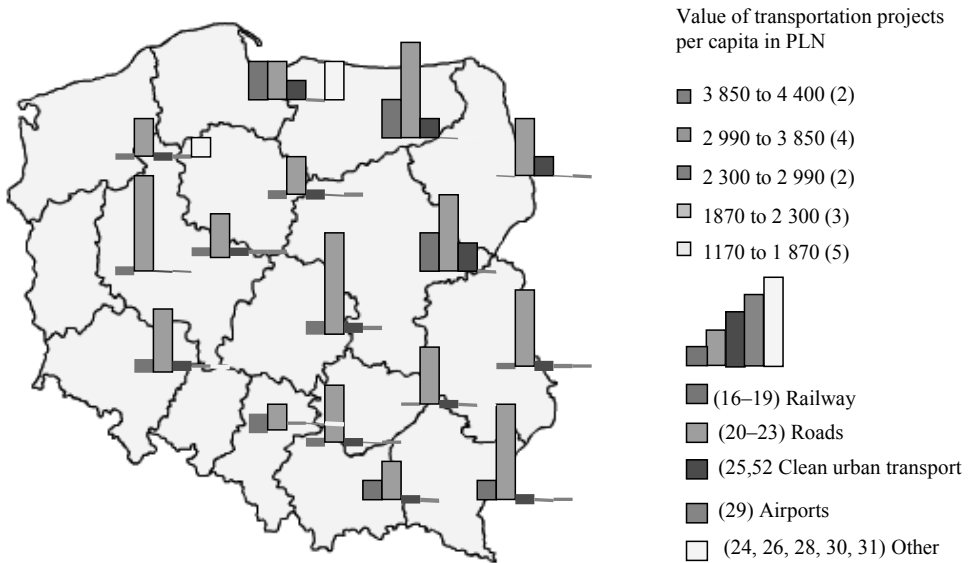
The scope of the projects is illustrated by the value of the contracts defining the EU subsidies (in PLN). Transportation contracts have been subjected to classification in the notion of value per capita in PLN and in accordance with the means of transport. The highest value of the projects per capita was noted in warmińsko-mazurski province (4392 PLN) and podkarpacki (4168 PLN). Investments in railways were realized to the highest levels in Pomorze and Mazowsze. The value of project-road contracts is

³ U. Kowalczyk, *Zielone korytarze w polityce transportowej RP*, „Logistyka” 2012, nr 2, p. 154.

⁴ B. Pawłowska, M. Bąk, P. Borkowski, *Poprawa gałęzi transportu oraz elementów sieci transportowych działaniem na rzecz realizacji celów europejskiej polityki transportowej*, „Logistyka” 2012, nr 2, p. 220.

however at its highest in the provinces of podkarpacki and warmińsko–mazurski. Nevertheless, airports were most highly subsidized in the provinces of pomorski and małopolski.⁵

Figure 2. Value of contracts (EU subsidies in PLN) per capita according to provinces (voivodeships) in the sphere of the type of transportation (state at the end of 2013)



Source: *Report on realization in 2013. National Strategic Reference Frameworks for the period 2007–2013*, Ministry of Infrastructure and Development, August 2014, p. 50.

Transportation activity has led to the degradation of the natural environment for many years. Hence, analysis has been run of the projects in the sphere of environmental protection and the prevention of natural threats. The amount of money allocated for this purpose amounted to 9 bn euro. Up to the end of 2013, almost 4,100 contracts were realized to the amount of 34.5 bn PLN.⁶

Significant issues constitute the forecasts for demand for transportation services in the period of 2020–2030. Two variants have been assumed as follows: the maximum variant and the minimum variant (Table 3). In terms of transportation services, three types of transportation have been distinguished: railway, road and other. Analysis of data indicates that the growth in the demand for road transportation services is high and amounts to approximately 30%. Demand for railway services shall be significantly lower as it amounts to approximately 10%. The optimization matrix and modelling are applied to evaluate sustainable transportation. The aims of enterprises and types of means of transport, as well as orders are all taken into account.⁷

⁵ *Report on realization in 2013. National Strategic Reference Frameworks for the period 2007–2013*, Ministry of Infrastructure and Development, August 2014, p. 5.

⁶ *Report on realization*, op.cit., p. 57.

⁷ Zhi–Hua Hu, Zhao–Wan Sheng, *A decision support system for public logistics information service management and optimization. Decision, Support, Systems.* „Journal Homepage”, December 2013, p. 226.

Table 3. Prognosis of the increase in the demand for transportation of goods for 2030
(in millions of tons)

Type of transport	Maximum variant			Minimum variant		
	2010	2020	2030	2010	2020	2030
Rail transport	217	244	286	217	238	270
Vehicle transport	1588	1942	2241	1588	1901	2135
Other	112	134	175	112	129	159

Source: W. Skibińska, *Analysis of vehicle transport in terms of transport of goods in Poland*, /in:/ *Innovation of logistics processes*, scientific editor: B. Skowron–Grabowska, VSB Technical University, Ostrava 2014, p. 61.

Sustainable transport and EU projects

In the processes of globalization and high dynamics of change in the environment, the premises of reorientation of the current imperatives of their functioning are formed, as well as modification of the bases of the principles of the system of managing an enterprise.⁸ Transportation enterprises are thus forced to search for an appropriate strategy of operations which, by means of improving the levels of efficiency and effectiveness shall ensure them of market success.⁹ The strategy of operations for transportation enterprises while taking account of EU projects has been presented in Figure 3.

Sustainable transport may be subjected to analysis in the context of a “creative” strategy as the sequence of four processes. These are the processes of innovativeness, entrepreneurship and organizational project. The groundwork of this type of strategy should be acknowledged as the creation of new ideas at the organizational level¹⁰, by taking account of transportation as the fundamental sector of the national economy of sustainable development.

The reference point of sustainable transport may be assumed to be the concept of the globally violated equilibrium that constitutes a threat to socio–economic development. The development of enterprises with the violation of this equilibrium is becoming more and more difficult. E. Mączyńska claims that „...tradycyjne normy i modele szybko tracą aktualność”¹¹ (the traditional norms and models are rapidly losing their validity) not only in the economy, but also in terms of management.

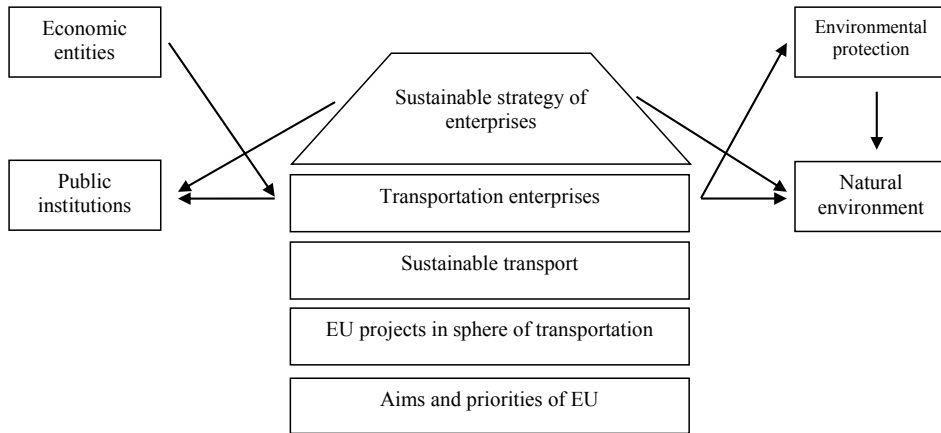
⁸ *Zarządzanie przedsiębiorstwem w warunkach globalizacji*, scientific editor: R. Borowiecki. Uniwersytet Ekonomiczny, Kraków 2014, pp. 34–35.

⁹ I. Turek, *The effectiveness of innovative activity in business management*, /in:/ *Innovation of logistic processes*, scientific editor: B. Skowron–Grabowska. VSB Technical University, Ostrava 2014, p. 123.

¹⁰ W. Dyduch, *Twórcza strategia–przemijająca koncepcja, czy przyszłość zarządzania strategicznego*, /in:/ *Zarządzanie strategiczne Quo Vadis*, scientific editor: R. Krupski, Prace naukowe Wałbrzyskiej Wyższej Szkoły Zarządzania i Przedsiębiorczości, t. 22, p. 190.

¹¹ E. Mączyńska, *Anatomiczne podłoże erozji ładu gospodarczego*, /in:/ *Spontaniczne i stanowione elementy ładu gospodarczego w procesie transformacji – dryf ładu czy jego doskonalenie*, Polskie Towarzystwo Ekonomiczne, Warszawa 2014, p. 40.

Figure 3. Strategy of operations of transportation enterprises in light of EU projects



Source: author's own research.

Polish transportation enterprises are thus undertaking various activities in the pro-ecological sphere. The basis of this type signifies a more appropriate image and more beneficial perception of the enterprise at hand on the part of clients for whom pro-ecological activities are the guarantee of creating new value in terms of transportation services. Simultaneously, transportation enterprises increase their competitive position.¹² The competitive position remains in direct ties with the resources of enterprises¹³.

In accepting the view of E. Stańczyk–Hugiet with relation to the level of adaptability in enterprises, it is essential to concur that the greatest potential in this sphere exists with regard to the reputation of a company, the time of making decisions, innovativeness, knowledge and experience. The aforesaid ties are encompassed within the resource flow.¹⁴ Resources are the fundamental factor of the competitive advantage of transportation enterprises.¹⁵ Direct references to the resource flow exist in the realization of EU projects. The EU, in displaying its projects, aims to appropriately define the objectives and priorities with regard to sustainable transport. Transport is however the fundamental element of the strategies of enterprises that function in the sustainable market economy and which are forced towards a competitive battle.¹⁶ Competitiveness in the EU is fair (or just) only when it is played out in comparable circumstances. These circumstances include the transportation infrastructure that has been modernized and built up over the course of almost two decades in the 21st century within the framework of EU projects.¹⁷ These

¹² E. Placzek, *Koncepcje zrównoważonego rozwoju u operatorów logistycznych*, „Logistyka” 2011, nr 4, p. 751.

¹³ R. Krupski, *Teoria zmian w teorii zarządzania strategicznego. Próba kojarzenia*, /in:/ *Zarządzanie strategiczne. Quo Vadis*, scientific editor: R. Krupski, Prace naukowe WWSzZiP, t. 22, Wałbrzych 2013, p. 100.

¹⁴ E. Stańczyk – Hugiet, *Perspektywa ewolucyjna w zarządzaniu strategicznym. Refleksje z badań*, /in:/ *Nowe kierunki w zarządzaniu przedsiębiorstwem – wiodące orientacje*, scientific editor: J. Lichtarski, S. Nowosielski, G. Osbert–Pociecha, E. Tobaszewska–Zajbert, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław NR340, 2014, pp. 148, 149.

¹⁵ I. Otolą, *Aspekty podejścia zasobowego w formułowaniu strategii przedsiębiorstwa*, „Organizacja i zarządzanie. Kwartalnik Naukowy” Nr 3(23). Politechnika Śląska, Gliwice 2013, p. 116.

¹⁶ M. Dziura, *Nowa gospodarka – gospodarka wiedzy i innowacji*, /in:/ *Zarządzanie przedsiębiorstwem w warunkach globalizacji – szanse i zagrożenia*, scientific editor: R. Borowiecki, Uniwersytet Ekonomiczny w Krakowie – Fundacja Uniwersytetu Ekonomicznego w Krakowie, Kraków 2014, p. 68–69.

¹⁷ B. Skowron–Grabowska, M. Dziura, *Industrial productivity and international competitiveness – the Polish case within EU*, /in:/ *Knowledge, economy, society. Challenges of contemporary economies in the face of global market conditions*,

projects have thus both directly and indirectly led to the development of transportation in Poland. The fact of the initiation of projects in accordance with the principles of sustainable transport and respect for the natural environment is particularly deserving of mention.

It is also possible to state that the EU projects are "necessary to continue efforts in key fields in order to develop common principles which should be effectively implemented and monitored"¹⁸. Hence, the EU projects have become a significant element in socio-economic change in Poland.

The consequence of the adaptation of the concept of sustainable development in transportation in terms of the scale of the EU constitutes the necessity of implementing these ideas on both a national and regional scale. It is emphasized that the activities run at the particular administrative levels of the country require economic and legislative regulation. The preparation and implementation of the concept of sustainable development in planning and executive dimensions is assumed to be the principle at hand.¹⁹ The planning nature should be referred to in terms of the strategy of sustainable transport. The realization of the EU projects thus requires the implementation of a strategy whose aim is that of sustainable transport, which provides the guarantee of the global economic development of the EU.

Conclusion

In this paper, the problematic issues of the EU projects have been presented in the context of the development of transportation in Poland. The fundamental economic indicators characterizing the Polish economy and the effects of the implementation of the EU projects in the sector of transportation have been illustrated.

Likewise, in this paper the problematic issues of sustainable development in the context of the "creative" strategy have also been undertaken. The concept of the globally violated equilibrium has also been presented, which indeed constitutes a threat to socio-economic growth. Enterprises are therefore forced to undertake responsible and integrated activities in the sphere of sustainable transport. This activity remains in direct ties with the resources of enterprises that determine the level and potential of the objectives achieved by the enterprises. The aims set out are possible to realize as a result of the implementation of the EU projects that facilitate the levelling off of opportunities in the countries integrated into the EU in 2004 and over the last few years. The opportunities and development of transportation enterprises, while maintaining the principle of sustainable transport in light of the EU projects ensure success on such an uncertain and competitive market at present.

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¹⁸ J. Machnik–Słomka, M. Bojar, *The role of social interactions in designing and management of complex undertakings in the context of global sustainability*, “Organizacja i zarządzanie. Kwartalnik Naukowy”, Nr 3(23), Politechnika Śląska, Gliwice 2013, p. 58.

¹⁹ O. Pietrzak, *System transportu pasażerskiego w Województwie Zachodniopomorskim w aspekcie równoważonego rozwoju*, „Logistyka” 2012, nr 2, p. 235.

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Joanna Nowakowska-Grunt
Czestochowa University of Technology, Poland

Katarzyna Żmija
Cracow University of Economics, Poland

SELECTED DETERMINANTS OF THE ABSORPTION OF EU FUNDS IN THE OPINION OF MICROENTREPRENEURS

Summary

The effective use of support instruments can be regarded nowadays as one of the important factors that determine the development of micro, small and medium-sized enterprises. The activity in the absorption of support is determined by many factors, including the conditions, availability and quality of support. The primary objective of the study was to assess how the selected instruments of assistance from the European Union match the needs and possibilities of microenterprises. The results of the research allowed to identify both the factors that contribute to and the essential barriers to absorbing investment support from EU funds for microentrepreneurs on the example of measures which were implemented in the framework of the Rural Development Program in the years 2007–2013.

* * *

Introduction

The complex and dynamic environment, in which micro-, small and medium enterprises operate, requires from them an efficient and flexible action and use of the emerging opportunities for development. In the subject literature, there are indicated a lot of advantages of enterprises of the SME sector compared to large enterprises¹. Nevertheless, at the same time, there are listed a lot of factors limiting their development, among others, resulting from the specificity of these entities, which justifies the necessity to support this category of enterprises. This support takes the form of specific instruments addressed

¹ K. Kotulska, *Znaczenie specyfiki małych i średnich przedsiębiorstw w dobie kryzysu gospodarczego*, /In:/ *Aktualne problemy funkcjonowania i rozwoju przedsiębiorstw*, M. Kowalik, A. Sierpińskiej-Sawicz (eds.), Vizja Press&IT, Warszawa 2014, pp. 377–387.

to the SME sector. The ability to gain and effectively use them can be regarded nowadays as one of significant factors determining the development of micro-, small and medium enterprises.

The problem of support for micro-, small and medium enterprises can be regarded from two points of view. The first one refers to support donors, in the framework of which the considerations include:

- the general area focused on systemic assumptions concerning the support for enterprises of the SME sector,
- the institutional area, concerning the principles of the establishment and functioning of support institutions operating in business environment, coordinating or developing the activities supporting SMEs.

The considerations taken into account from the other point of view – support recipients, i.e. micro-, small and medium enterprises, on the other hand, focus on the problems of identification and assessment of principles of the acquisition and effects of using support available in their external environment. Therefore, the issue of support considered from the general and institutional point of view concentrates on creating mezo- and micro-economic systemic solutions, from the perspective of micro-, small and medium enterprises, constituting the support segment, occurring in their environment, on which they have no essential or direct impact and which significantly determines the opportunities for their development. There is here the asymmetry of interaction between these two areas, resulting from low bargaining power of enterprises from the SME sector with substantial dependence of their development on the quality and availability of support occurring in the environment².

Taking the above into account, the primary objective of the paper has been the assessment of the degree of adjustment of selected support instruments from EU funds to the needs and possibilities of enterprises of the SME sector as an essential determinant of the absorption of support. There has been presented the essence of support instruments for micro-, small and medium enterprises, their classification and the factors conditioning their use. In the empirical studies, the focus of attention has been the assessment of selected instruments providing direct support for investment activity of enterprises on account of the fact that it is a type of the activity of particular importance for the implementation of development processes of enterprises. The analyzed group was microenterprises which, as the studies by different authors indicate³, have the greatest problems with fulfilling the requirements associated with the reception of EU funds compared to other enterprises of the SME sector. More complete knowledge of problems of the absorption of EU funds in the sector of micro-companies will contribute to the better understanding of specific needs and requirements of this group of enterprises.

Materials and methods

The primary objective of the research was the assessment of the degree of adjustment of selected support instruments from EU funds to the needs and possibilities of microenterprises. Apart from the subject literature, the basis for the paper was the results of own survey, including the beneficiaries of the selected actions of the Rural Development Program in the years 2007–2013 (PROW 2007–2013), offering non-repayable financial support for investment projects developed by the newly established or already functioning micro-enterprises from the rural areas of the Lesser Poland Voivodeship.

² M. Matejun, *Absorpcja wsparcia w zarządzaniu rozwojem mikro, małych i średnich przedsiębiorstw – podejście strategiczne*, Zeszyty Naukowe Politechniki Łódzkiej No 1194, Rozprawy Naukowe Z. 483, Politechnika Łódzka, Łódź 2015, pp. 47–49.

³ R. Wolański, *Wpływ otoczenia finansowego na konkurencyjność małych i średnich przedsiębiorstw*, Oficyna Wolters Kluwer Business, Warszawa 2013, pp. 239–242; H. Tödting–Schönhofer, Ch. Hamza, L. Polverari, J. Bachtler, *Bariery dla podmiotów ubiegających się o środki z funduszy strukturalnych*, Parlament Europejski, Bruksela 2012, p. 10; A. Włodarczyk, *Mikroprzedsiębiorcy, a fundusze strukturalne – badanie uwarunkowań na ziemi chełmskiej*, Stowarzyszenia Porozumienie Ziemi Chełmskiej, Chełm 2008, p. 4.

The research included three measures of PROW 2007–2013:

- measure 311 – Diversification towards non-agricultural activities,
- measure 312 – Creation and development of microenterprises,
- measure 413 – Implementation of local development strategies for operations corresponding to the conditions of granting aid under the measure 311 or 312.

The research was conducted on the extended sample of 291 beneficiaries (micro-enterprises) who, in the years 2007–2012, completed the project development and received the payment of funds under the discussed operations. The selection of the respondents was determined by the fact that it was a group of entrepreneurs who were able, in a complex way, to assess the whole process of the application for EU funds until the final settlement of the investment and the reception of the grant.

The conditions of the absorption of support by micro-, small and medium enterprises

Support instruments include public and public–private operations that result in creating specific services addressed to the selected entities and structures, recognized as the strategic ones for the country. The basic assumption constituting the foundation for this support is the expectation that its consequence will be measurable benefits for its recipient, manifesting themselves in its economic strengthening⁴. From the point of view of enterprises of the SME sector, support instruments take the form of the market offer of various institutions of small business environment and they can be defined as “external, specified and formalized streams of resource–based or positional values, stimulating quantitative or qualitative changes, leading to development of the enterprise, taking into account desirable changes in the environment”⁵.

In the subject literature, there are presented various classifications of instruments supporting development of micro-, small and medium enterprises. Frequently cited types of systematics identify specific groups of these instruments, e.g. financial, legal, organizational, general business–like, information, training and consulting ones⁶. Sometimes, there is presented the division into two groups of instruments⁷:

- financial ones, associated with the financial support for SMEs (e.g. credits and loans, indemnities and warranties, grants and subsidies, tax relief);
- non-financial ones, including a range of sub-groups (e.g. training instruments, information, consulting and advisory, legal, educational, organizational, regulatory ones and others).

The broadest systematics seems to be the division into direct instruments, bringing about a specific benefit for individualized recipients, meeting specific selection criteria and indirect ones, addressed to the whole sector of enterprises⁸. In the management of development of micro-, small and medium

⁴ K.B. Matusiak, *Rozwój systemów wsparcia przedsiębiorczości – przesłanki, polityka i instytucje*, Wydawnictwo Instytutu Technologii Eksploatacji – PIB, Radom – Łódź 2006, p. 141.

⁵ M. Matejun, P. Przepióra, *Absorpcja wsparcia w procesach rozwojowych przedsiębiorstw – studium przypadku małej firmy*, /In:/ *Uwarunkowania rynkowe rozwoju mikro, małych i średnich przedsiębiorstw*, A. Bielawska (ed.), Zeszyty Naukowe Uniwersytetu Szczecińskiego No 752 – Ekonomiczne Problemy Usług, No 102/2013, p. 108.

⁶ D. Stawasz, D. Sikora – Fernandez, *Polityka miejska a rozwój sektora MSP*, /In:/ *Zarządzanie rozwojem małych i średnich przedsiębiorstw*, S. Lachiewicz, M. Matejun (eds.), Oficyna a Wolters Kluwer Business, Warszawa 2011, pp. 137–139; R. Lisowska, R. Stanisławski, *Obszary i instrumenty wsparcia małych i średnich przedsiębiorstw w świetle badań na przykładzie województwa łódzkiego*, /In:/ *Wspomaganie i finansowanie rozwoju małych i średnich przedsiębiorstw*, M. Matejun (ed.), Difin, Warszawa 2011, p. 292.

⁷ B. Filipiak, J. Ruszała, *Instytucje otoczenia biznesu. Rozwój, wsparcie i instrumenty*, Difin, Warszawa 2009, pp. 62–63.

⁸ M. Gancarczyk, *Wsparcie publiczne dla MSP. Podstawy teoretyczne a praktyka gospodarcza*, Wydawnictwo C.H. Beck, Warszawa 2010, pp. 139–142; *Instrumenty polityki regionalnej i strukturalnej wspierające rozwój przedsiębiorczości na obszarach wiejskich*, A. Wasilewski (ed.), IERiGŻ PIB, Warszawa 2011, pp. 33 – 34.

enterprises it is crucial to use direct support with simultaneous awareness and use of favorable general conditions created by indirect instruments⁹.

In the framework of the available catalogue of instruments, there can be identified instruments supporting development of micro-, small and medium enterprises on a commercial basis, whose basic task in development processes is to supplement resource and competency shortages of enterprises of the SME sector. Some instruments are offered non-commercially by entities operating on a non-profit basis (e.g. by innovation and entrepreneurship centers) or they take the form of systemic support (e.g. tax relief). In the conditions of the European integration, support for enterprises of the SME sector is often mainly associated with the development of the European policy of supporting SMEs¹⁰.

The common feature of all instruments is the necessity for their acquisition by means of which it will become possible to use them in development processes of micro-, small and medium enterprises. Therefore, the absorption of support¹¹, including the following operations, is necessary¹²:

- adoption of the specific development orientation considering the use of the external support,
- identification and selection of support instruments providing their adjustment to development expectations of the company,
- acquisition and use of support instruments aimed at the achievement of specific goals,
- binding the effects of the use of support instruments with development processes of the company.

The approach of micro-, small and medium enterprises to taking actions in the field of the absorption of support instruments is determined by many factors. On account of their nature, it is possible to classify them by means of their division into external or internal conditions with regard to the entity which intends to benefit from this support. The first group of conditions is definitely independent of the enterprise and indirectly affects the decision on the use of support. At this point, there should be mentioned different types of political, legal, economic, social, institutional, cultural or historical conditions. Therefore, in this group, there are e.g. the conditions connected with the general macroeconomic situation in the country, the complexity of the application process or availability of specialized advisory institutions. The internal conditions are associated with entities themselves, applying for support, and are directly dependent on them. The decision referring to the use of support is significantly affected by creativity, entrepreneurship and other characteristics of owners or managers favorable for the pro-active attitude towards acquiring support¹³. The resources disposed by the enterprise (e.g. possessing specialized organizational units, disposing of the capital, which will co-fund the project) and previous experiences (e.g. in the field of development of similar projects or application for EU funds) are also very important¹⁴. Among the internal determinants conditioning the absorption of support, apart from the profile (personality) of the entrepreneur, M. Matejun also lists the development orientation of the company, measured with

⁹ M. Matejun, *Absorpcja wsparcia w zarządzaniu...*, *op. cit.*, p. 51

¹⁰ M. Gancarczyk, *Wsparcie publiczne dla MSP...*, pp. 125–138.

¹¹ At this point, it should be pinpointed that the concept of absorption is nowadays frequently applied, most of all, with reference to EU support instruments, which results from the use of this term in official legal EU documents and studies. With reference to the SME sector, this concept should not be limited only to public EU funds but they may be referred to other support instruments. See: M. Matejun, *Absorpcja wsparcia w zarządzaniu...*, *op. cit.*, p. 79; M. Fabińska, *Prorozwojowa gotowość polskich MŚP do absorpcji wsparcia w ramach nowej perspektywy programowej 2014–2020*, /In:/ *Polityka ekonomiczna*, J. Sokołowski, A. Żabiński (eds.), Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu No 348, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław 2014, p. 54.

¹² M. Matejun, P. Przepióra, *op. cit.*, p. 110;

¹³ B. Piasecki, *Mała firma w teoriach ekonomicznych*, /In:/ *Ekonomika i zarządzanie małą firmą*, B. Piasecki (ed.), PWN, Warszawa–Łódź 2001, pp. 25–26.

¹⁴ D. Bielecka, *Ocena organizacji systemu wdrażania funduszy pomocowych Unii Europejskiej. Czynniki wpływające na wykorzystanie funduszy pomocowych Unii Europejskiej przez gminy*, Samorząd terytorialny, No 6/2006, pp. 34–56; M. Kozera, *Regionalne zróżnicowanie wykorzystania środków pomocowych Unii Europejskiej*, *Roczniki Nauk Rolniczych, Seria G–Ekonomika Rolnictwa*, Vol. 98, z. 3, 2011, Szkoła Główna Gospodarstwa Wiejskiego, Warszawa 2011, p. 122.

the strength of its attitude towards development and dynamics of the stage of the life cycle of the company¹⁵. On the other hand, among the main external factors determining the absorptive attitude of enterprises of the SME sector, he lists general socio-economic conditions, important for development of entrepreneurship, including, in particular, the conditions, availability and quality of support offered to micro-, small and medium enterprises¹⁶.

The determinants of the process of the absorption of support can also be divided into financial and non-financial ones. While referring this division to the specificity of particular support instruments, which EU aid programs are, the first group of determinants may, for example, include the lack of own funds sufficient to cover the required own contribution or the lack of opportunities to obtain external funding for financial engineering (e.g. the lack of possibility to get a credit). The other group – non-financial factors – is the set including much more developed catalogue of different criteria, frequently qualitative in nature. However, there can be observed a different nature of the determinants conditioning the course of the process of support acquisition at its individual stages. For example, non-financial determinants, at the stage of applying for funds, should, among others, include the availability of information on individual programs, cooperation with the implementing institutions, the conditions of the provided support and procedural requirements at this stage, knowledge and competences of employees of the company, availability and qualifications of consulting companies. At the stage of the project development, the following factors become important: experience in project development, competences of project contractors, procedural requirements connected, for example, with the possibility of making changes to the project etc. At the stage of project settlement, such a determinant, among others, refers to procedural requirements associated with project settlement¹⁷.

It should be pointed that the assessment of the above mentioned factors, including, most of all, the assessment of the conditions, quality and availability of support may be different depending on the entity making the assessment. Therefore, the evaluation of support instruments carried out by owners (managers) will be characterized by a significant degree of subjectivism and it will constitute an important factor determining the attitude in terms of the absorption of support instruments¹⁸.

Investment support from EU funds in terms of the needs and possibilities of micro-enterprises in rural areas

The assessment of adjustment of selected support instruments of the EU to the needs and possibilities of micro-enterprises was carried out on the basis of the opinions of the beneficiaries of three operations performed in the framework of the Rural Development Program in the years 2007–2013 (PROW 2007–2013). The primary objectives of the analyzed operations of PROW 2007–2013 focused on an increase in economic competitiveness of rural areas, creating non-rural sources of revenue, promotion of employment outside agriculture and development of entrepreneurship in these areas. The support in the framework of the discussed operations could be provided to investment projects for the benefit of development of the economic activity in the field of production, trade, tourism, services for agricultural holdings or forestry, services for the population or other type of services. Potential beneficiaries of the

¹⁵ K. Wach, *Otoczenie biznesu a fazy rozwoju małych i średnich przedsiębiorstw*, „Zeszyty Naukowe Uniwersytetu Ekonomicznego w Krakowie”, No 769/2008, pp. 41–54.

¹⁶ M. Matejun, *Absorpcja wsparcia w zarządzaniu...*, *op. cit.*, pp. 91–100.

¹⁷ R. Zajkowski, *Pozafinansowe kryteria oceny procesu pozyskania środków unijnych przez jednostki samorządu terytorialnego*, /In:/ *Uwarunkowania wykorzystania funduszy Unii Europejskiej przez jednostki samorządu terytorialnego w województwie lubelskim*, J. Węclawskiego, W. Misterka (eds.), Difin, Warszawa 2011, pp. 135–170.

¹⁸ M. Matejun, *Absorpcja wsparcia w zarządzaniu...*, *op. cit.*, pp. 100–101.

actions and operations (projects), which they intended to implement, had to satisfy a range of conditions specified in the program documents¹⁹.

Granting from EU funds allowed the analyzed beneficiaries to implement projects of the total value of PLN 77.0 million, which were granted the subsidies of the total of PLN 29.2 million. The basic information on the beneficiaries and their investment projects indicates that granting was received by micro-enterprises that were run almost exclusively in the form of the economic activity of natural persons. These were enterprises of different age, however, nearly 65% of them were the companies operating on the market for less than 5 years. The dominant profile of the activity was the service activity (83.3% of the total of the beneficiaries). Far fewer entities conducted the manufacturing (11.2%) or trade activity (5.5%). The surveyed companies operated in the traditionally well-developed sectors in the area of the Lesser Poland Voivodeship, such as construction or services provided for agricultural holdings or forestry. The developed projects were rather simple in nature – entrepreneurs preferred modernization investments, associated with the purchase of new machines and equipment. They brought about a range of positive effects, contributing to the development of the funded enterprises and allowing for an increase in their competitiveness. Positive changes referred to the product range of the surveyed enterprises, the applied production methods and the ways of distribution, the achieved economic results and other fields of the conducted activity.

One of the more significant determinants conditioning the level of the absorption of support measures was the availability and favorable conditions of the offered support which, among others, consists of clear principles, procedures and low formal restrictions, adjusted to the possibilities and needs of companies of different size. To assess these issues the respondents were requested to evaluate a range of issues connected with the use of EU funds in the framework of the conducted activities. The subject of the research was particularly the factors such as:

- the availability and quality of the information on opportunities for receiving support in public institutions, media and availability and quality of training on the use of EU funds,
- procedural requirements associated with the criteria, conditioning the possibility of applying for grants, range of costs eligible for refund and the moment of payment of the grant,
- financial factors connected with the minimum threshold value of the investment, the maximum value of the grant, the required share of own funds and the principles of advance payments for the project,
- other factors not directly indicated in the survey.

The respondents made the assessment while using the following scale of adjustment to the needs and possibilities of enterprises: 1 – matched, 2 – rather matched, 3 – rather mismatched, 4 – mismatched, 5 – I have no opinion. In the course of the studies, there was made an attempt to indicate the elements associated with the process of realization of the investment subsidized from EU funds which, in the opinion of the beneficiaries, should be modified or improved to increase the adjustment of the analyzed actions to the expectations and investment needs of microenterprises in rural areas.

In Table 1, there is presented the structure of the responses of the beneficiaries of PROW 2007–2013 concerning the factors determining the adjustment of the analyzed actions to the needs and possibilities of their enterprises. The first analyzed set of factors affecting the application process referred to the availability and quality of information and training on financial support from EU funds. The respondents assessed very well the activity of public institutions such as the Agency for Restructuring and Modernization of Agriculture (ARiMR), Małopolskie Center of Entrepreneurship (MCP), municipal or city offices, agricultural advisory centers, consultation points etc. The rating of the availability and quality of this type of information in media (TV, radio, press, Internet) was also positive. These factors were evaluated positively by more than 90% of the respondents of all the activities. The availability

¹⁹ *Program Rozwoju Obszarów Wiejskich na lata 2007–2013 (PROW 2007–2013)*, Ministerstwo Rolnictwa i Rozwoju Wsi, Warszawa, May 2015, pp. 300–341.

and quality of training on the use of EU funds was assessed slightly worse. In this case, 8% of those questioned were not able to clearly assess this factor, which may indicate the lack of knowledge with reference to this source of information on EU funds.

Subsequently, the beneficiaries evaluated the procedural issues. With reference to the surveyed actions, the adjustment of criteria conditioning the opportunity for applying for grants and the possibilities of the beneficiaries was positively assessed by 95% of the respondents. The beneficiaries reported slightly more objections in relation to the range of costs eligible for refund. The opinion on their mismatch to the needs and possibilities of the beneficiaries was expressed by 17% of the respondents. However, the factor associated with the moment of payment of the grant, obtained by the beneficiary only after the completion of the investment and final settlement of the project, raised the major objections. As much as 37% of those questioned acknowledged that it is mismatched or rather mismatched to the needs and possibilities of the enterprise.

In the field of financial factors exerting impact on adjustment of the analyzed actions to the needs and possibilities of microenterprises, the studies indicated that the beneficiaries generally did not raise objections to the minimum threshold value of the investment, therefore, it did not constitute a more important barrier which could negatively affect the decision on applying for support. In the opinion of the respondents, the maximum threshold dotation, established in individual actions, which was unsatisfactory for as much as 17% of those questioned, raised much more objections. More than one in four of the beneficiaries of PROW also acknowledged that the required share of own funds is not matched to the needs and possibilities of their enterprise. The objection to this factor is most understandable since, from the point of view of the entrepreneur, it is obviously advantageous that the share of financing from EU funds is as high as possible.

The conditions of advance payment for granted projects were positively assessed by 39% of those questioned, however, more than half of the respondents were not able to express their opinion on this issue, which probably results from the fact that they had not used them and they did not have relevant knowledge of the principles of granting them. As far as other factors are concerned, only two respondents indicated their own answers, although, referring to the factors listed above – the moment of refund and the range of eligible costs. In both cases they were assessed negatively.

The entrepreneurs also indicated the expected areas of changes, which would bring about better adjustment of the analyzed actions to the expectations and investment needs of microenterprises in rural areas. The responses of the beneficiaries in this field are presented in Figure 1. The most frequently discussed issue was the simplification of the application documentation, reduction in the duration of the whole procedure of granting aid, and also acceleration of refund of the incurred investment. Every fifth beneficiary of PROW found it justified to change the range of costs eligible for refund, e.g. including the possibility of purchase of used fixed assets. 18% of those questioned acknowledged that it would be advisable to raise the maximum threshold of the grant available in the framework of the analyzed actions. In the opinion of 12% of the respondents, it would be also necessary to specify the instructions for filling in the application documentation, which allows for the conclusion that the appropriate filling in of the application documentation is a great challenge for the beneficiaries. Other changes, such as the change in the criteria conditioning the opportunity for applying for the grant (e.g. by extending the list of codes of PKD – Polish Classification of Activities, eligible for support), changes in the range of the availability and quality of information on EU funds or reducing (eliminating) the minimum threshold value of the investment, were sporadically indicated by the beneficiaries of all the actions.

Table 1. The adjustment of actions to the needs and investment possibilities of enterprises in the opinion of the beneficiaries of PROW 2007–2013

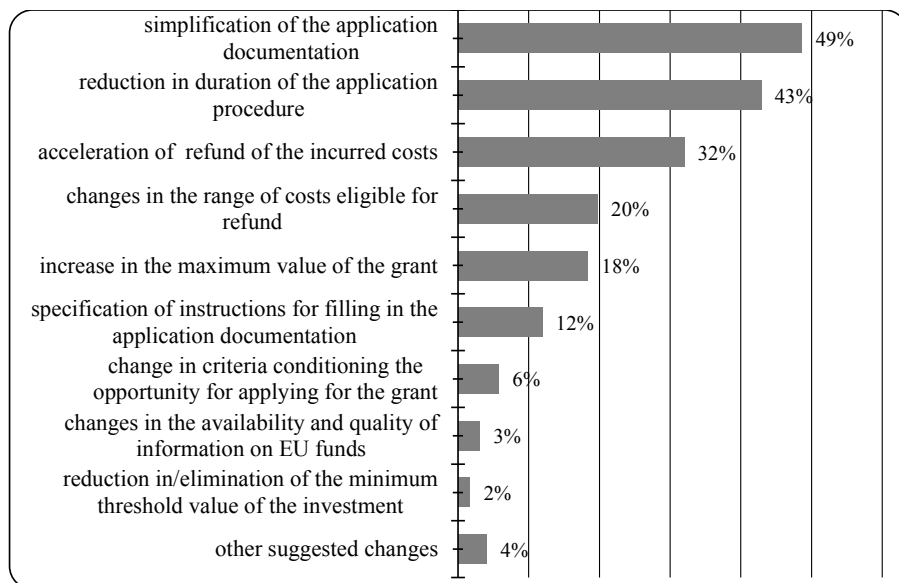
Rating	yes	rather yes	rather not	no	I have no opinion	average rating*
1. Availability and quality of information on the opportunity to receive support in public institutions (ARiMR, MCP, municipality and city offices, agricultural advisory centers, consultation points etc.)	44%	54%	2%	0%	0%	1.58
2. Availability and quality of information on the opportunity to receive support in media (TV, radio, press, Internet)	39%	54%	5%	0%	2%	1.66
3. Availability and quality of training on the use of EU funds	29%	55%	8%	0%	8%	1.78
4. Criteria conditioning the opportunity to apply for grants	31%	64%	5%	0%	0%	1.74
5. Range of costs eligible for refund	25%	57%	16%	2%	0%	1.94
6. Moment of the payment of the grant	13%	48%	24%	13%	2%	2.37
7. Minimum threshold value of the investment	30%	61%	9%	0%	0%	1.79
8. Maximum value of the grant	24%	59%	15%	2%	0%	1.95
9. Required share of own funds	19%	54%	23%	4%	0%	2.12
10. Advance payments for the project	13%	27%	7%	1%	52%	1.94
11. Other factors (please, indicate)	0%	0%	0%	100%	0%	4.00

Note: (*) average rating calculated with the exclusion of the beneficiaries responding: “I have no opinion”.

Source: authors' own study based on the conducted research.

Several beneficiaries indicated other suggestions for changes. The most frequently listed were: the suggestion to create the branches of the Agency for Restructuring and Modernisation of Agriculture (ARMA) in districts, which may indicate the fact that, for some entrepreneurs from rural areas, the impediment, while applying for support, is the necessity to complete formalities in Cracow. Therefore, an advisable change would be to increase the availability of the implementing institutions. Another suggested change was the proposition to introduce the possibility of modification of the material and financial statement, i.e. the statement including the listing of the developed partial investment tasks and their value, which would increase the freedom of decision-making, associated with modifications of the project to improve its efficiency, also at the stage of its development. Moreover, there were also indicated the changes concerning the simplification of the procedures of verification of the application and settlement of the investment, and also the change in criteria concerning employment and maintenance of new jobs created as a result of development of the investment, which was one of the obligations of the beneficiaries of the support in the framework of the measure 312.

Figure 1. The changes in the process of applying for EU funds suggested by the beneficiaries of PROW 2007–2013 (% of indications)



Source: authors' own study based on the conducted research

The above suggestions for changes corresponded with the responses of the beneficiaries concerning problems and difficulties that occurred at the stage of the application for funds, in the course of the project development or after its completion. Among the most frequently occurring problems there were listed:

- bureaucracy,
- a long time of verification of the application,
- complex formal and legal requirements,
- a long waiting time for the signing of the contract and refund,
- too many attachments and documents.

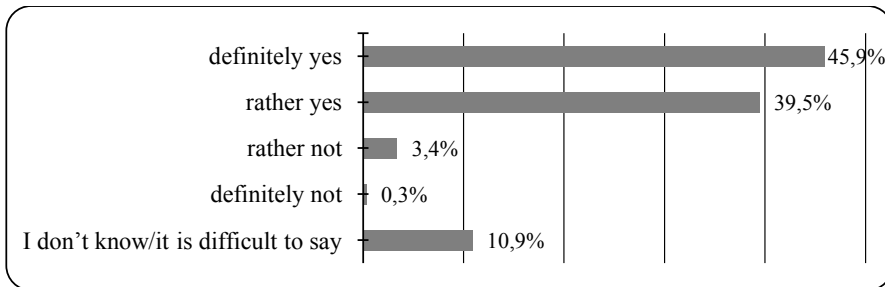
The objections of the beneficiaries were also directed to some issues associated with the legislation and procedures in force, including the lack of the opportunity to reuse the measures of the specific operation after the limit of funds has been reached (too low limit of funds), constraints concerning the purchase of the equipment, including used equipment, the lack of procedures referring to online services and vague regulations.

It should be mentioned that in the subsequent years of the programming period, the Ministry of Agriculture and Rural Development gradually introduced some changes in the procedures. In the framework of the measure 311, the most important changes referred to the limits of the granted aid and also the listing of the activities subjected to support under this operation. The modifications implemented in the framework of the measure 312 included, most of all, the changes concerning the limits of support (reducing the required number of new jobs for individual threshold values of the support), the scope of support and procedures in force in this operation (among others, the introduction of the possibility of making a single change in the field of the financial plan of the operation or the material and financial statement of the operation unless it brings about the change in the aim of the operation indicated in the application for granting aid and an increase in the amount of the grant). In 2013 there were introduced further changes, among others, consisting in the modification of the listing of activities included in

support, and also with reference to the constraint concerning the upper limit of the age of the applicant being a natural person. Therefore, the above modifications included only a small portion of changes suggested by the surveyed beneficiaries of PROW.

Present experiences resulting from the course of the realization of the investment subsidized from EU funds will clearly affect the decisions of the beneficiaries with reference to the use of the EU support in the future. The opinions on the respondents' attitude towards the application for funds in the framework of subsequent aid programs can be recognized as a barometer of the level of satisfaction of the beneficiaries with the process of the realization of the investment granted from EU funds.

Figure 2. Future decisions referring to the application for EU funds in terms of experiences from the project development under PROW 2007–2013 (% of indications)



Source: Authors' own study based on the conducted research

The responses of the beneficiaries, presented in Figure 2, indicate that, in spite of many reported objections, they show a very positive attitude towards applying for EU funds in the future. More than 85% of those questioned will decide on or they will rather decide on applying for funds in the framework of subsequent aid programs. Only few beneficiaries will not make a decision or rather not decide on another use of EU funds. A high percentage of the beneficiaries demonstrating willingness to use EU funds can be recognized as the satisfactory effect of the implementation of EU funds. Nevertheless, on the other hand, there are some concerns that a certain group of the beneficiaries, while referring to their previous experience, may make EU grants the source of financing of their activity, at the same time, limiting the access to these funds of other enterprises more in need of support for development processes.

Conclusion

The awareness of the significance of micro-, small and medium enterprises as stimulators of the process of transformation and improvement in the situation of the Polish economy should bring about facilitation in their establishment and functioning, which must be associated with the improvement in the system of the granted support. The responses obtained in the course of the research allowed for the indication of both favorable factors and major barriers concerning the reception of investment support from EU funds, on the example of the operations of PROW 2007–2013. The research results indicate good availability and quality of information on the possibilities of using EU support. The criteria conditioning the opportunity to receive grants are also assessed positively.

The main barriers to the absorption, most of all, included financial barriers, i.e. high own contribution, accompanied by the necessity to pre-finance the whole investment from own funds or other external sources (e.g. credits) with simultaneous unfriendly solutions concerning the advance payment for the project for beneficiaries. The problems connected with these issues were frequently indicated by the

beneficiaries, who raised many objections associated with a long waiting time for refund of the incurred expenditure.

In the group of those questioned, there predominated the views that the procedures and principles of granting aid involve great changes. The most desirable change in the process of applying for EU funds, in the opinion of the respondents, was the simplification of the application documents. The respondents recognized the documentation as complex, frequently ambiguous, while acknowledging a range of attachments as unnecessary at the stage of applying for funds. It is also frequently postulated to reduce the duration of the whole procedure of granting aid and also to accelerate the moment of refund of the expenditure incurred for the project development. The experiences of the beneficiaries indicate the necessity to take improvement actions, particularly in the above mentioned area with reference to support instruments available in the years 2014–2020.

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Nicola Rappazzo, Salvatore Sidoti
University of Messina, Italy

PUBLIC RESEARCH SPIN–OFF FIRMS: SOME EMPIRICAL EVIDENCE FROM SICILIAN UNIVERSITIES*

Summary

The current economic crisis that has affected the European area for years, on the one hand, has shown the limitations of a business system based on now obsolete business models and, on the other hand, has contributed to consolidating a knowledge–based economy.

According to Etzkowitz (1998), this ties in with the new and different role recently attributed to Italian public universities, which should adopt the management approach typical of firms, in order to attract new investors capable of providing the financial resources that universities are lacking.

These intentions are reflected in the so–called “third mission”, which is the subject of attention from public decision–makers.

In light of the foregoing, the paper aims to highlight the structural weaknesses and prospects for development of the Italian academic spin–off model. In particular, the work is divided into two sections.

Following an empirical–descriptive perspective and using a qualitative methodology (Corbetta, 2003; Castellini, 2009), the research first aims to identify the theoretical framework through the examination of the main contributions in existing literature.

Secondly, it focuses on an empirical investigation carried out, in particular, with reference to the spin–offs promoted by Sicilian universities.

* * *

Introduction

The spin–offs from public research represent a clear attempt to enhance knowhow developed within the university context and based on scientific and technological research.

* This paper is the result of a common research, in the phase of final drafting: Summary, paragraphs Introduction and Theoretical Framework can be attributed to Nicola Rappazzo; paragraphs Sampling and empirical evidence and Conclusions can be attributed to Salvatore Sidoti.

Indeed, the objective of these firms is to disseminate scientific knowledge and to contribute to the creation of new wealth for the country's economic system, taking advantage of public–private technology transfer (TT) partnership.

Taking a wider view, therefore, academic research has to be structured as a creative force and engine of economic growth and not as a simple condition of self-serving production².

In this regard, it seems proper to highlight how university spin-off companies are a driving force for the promotion of local economic development processes, as well as a key factor of the Open Innovation paradigm³.

Indeed, the bond between spin-offs and public research entities encourages experimentation with innovative ways of exploiting the results of scientific research, including through partnerships with existing companies, often large but not inclined to undertake high-risk research.

However, despite the high expectations, more recent studies have shown a trend of not particularly significant dimensional growth⁴.

Indeed, in the second half of the 1990s, the Italian model of public research spin-off showed reduced growth rates⁵.

On this point, the data from ANVUR (Italian University Research Evaluation Agency), relating to the qualitative assessment of public research for the period 2004–2010 (57 out of 95 evaluated respondent universities), show that Italian universities accredited 531 spin-off firms, producing a revenue of more than 200 million euros.

Almost half of the spin-offs were generated by 11 universities. A quarter of the total refers to just 5 universities. The phenomenon is strongly concentrated in the Centre and North of Italy. Among the top 11 universities, there are only two universities from the South with 16 spin-offs.

The largest firm records a revenue of EUR 7 million, the smallest of just 500 Euros, one out of six spin-offs report no revenue and 6 universities do not report any revenue data.

Moreover, the reading of data shows a series of possible critical issues in terms of the ability of these firms to persist in time (the average age of the spin-offs is about 5 years old), as well as in terms of managerial and financial autonomy.

As widely supported in literature⁶, these critical issues – deriving from Italy being behind in comparison to international models – are due, firstly, to the difficulty for spin-offs to find adequate financial resources needed to ensure normal production processes⁷ and, secondly, to the lack of appropriate managerial skills⁸.

² M.P. Feldman, D.F. Kogler, *The Contribution of Public Entities to Innovation and Technological Change*. /In:/ *The Handbook of Technology and Innovation Management*. Edit by S.Shane, West Sussex, Wiley Publishing, 2008, pp. 432–436.

³ H. Chesbrough, *Open Innovation: the new imperative for creating and profiting from technology*, Harvard Business School Press, Boston 2003, p. 75.

⁴ F. Lazzeri, A. Piccaluga, *Le imprese spin-off della ricerca pubblica: convinzioni, realtà e prospettive future*. „Economia e Società Regionale”, 2012, Vol.115, pp. 43–65.

⁵ B. Chiesa, A. Piccaluga, *Exploitation and diffusion of public research: the general framework and the case of academic spin-off companies*. „R&D Management”, 2000, Vol. 30, pp. 329–340.

⁶ C. Compagno, G. Lauto, E. Fornasier, *La Genesi degli Spin-off accademici di successo*. /In:/ *IX Workshop dei Docenti e dei Ricercatori di Organizzazione Aziendale. L'organizzazione fa la differenza?*, Venezia 2008, p. 20.

⁷ G. Amendolia, *L'imprenditorialità difficile: la creazione in Italia di imprese high-tech da parte dei ricercatori universitari*. Ed. by: F. Martinelli, & G. Bartolomei, Università e Tecnopoli, Pisa 1992.

⁸ T. Abbate, *Market orientation nelle imprese ad elevato contenuto tecnologico. Indagine sugli spin-off accademici italiani*, FrancoAngeli, Milano 2012.

The phenomenon of spin-off research still has to be considered from a wider perspective, to avoid the risk of reducing university research to a “simple factor of production”, recognizing, instead, its true role of multiform and creative economic strength⁹.

Theoretical framework

Over the years, the literature on university spin-offs was primarily focused on business models useful for exploiting the results of scientific research.

Analysis of literature shows the difficulty in identifying a unified definition of academic spin-offs.

Despite this, many authors link the definition of academic spin-off to certain specific aspects such as¹⁰:

- the scientific context in which it originated and developed the research and / or new technologies,
- the link between research center, academic staff and researchers,
- the role of those who finance the new firm.

A definition including varied contributions from many sources is proposed by Compagno et al. (2008)¹¹, according to which a spin-off is a new business initiative that is started by professors, researchers and graduate students in order to pursue the business opportunities opened up by the application of knowledge and technologies developed through research.

It should be highlighted that, in practice, they tend to distinguish between:

- University Spin-Offs, in which the University holds shares;
- Academic Spin-Offs, promoted by at least one professor or assistant professor, in which universities do not subscribe shares.

Support for the creation and development of Academic Spin-Offs is encouraged by the University in order to promote the establishment of new business initiatives in areas of technological interest.

After reviewing some definitions in literature and the main studies on the development of spin-offs, it seems appropriate to highlight the existence of a gap between studies conducted in Europe and those carried out in the US context.

Several papers, in particular, showed the importance that the environment (local and regional) has on technology transfer activities. This topic is the focus of the debate that is also influencing Italian doctrine¹².

Main lines of research have focused on:

- the topic of university patents¹³,
- the creation of spin-offs¹⁴,

⁹ M.P.Feldman, D.F. Kogler, *op. cit.*, p. 440.

¹⁰ B. Clarysse, N. Moray, *A process study of entrepreneurial team formation: the case of a research-based spin-off*, *Journal of Business Venturing*, 2004, Vol. 19, pp. 55–79.

¹¹ C. Compagno, G. Lauto, E. Fornasier, *op.cit.*, p. 22.

¹² R. Fini, R. Grimaldi, S. Santoni, M. Sovreo, *Complements or substitutes? The role of Universities and local context in supporting the creation of academic spin-offs*, „Research policy”, 2011, Vol. 40, pp. 1113–1127.

¹³ N. Baldini, *Implementing Bayh–Dole–like laws: Faculty problems and their impact on university patenting activity*, „Research Policy”, 2009, Vol. 38, pp. 1217–1224; S. Breschi, F. Lissoni, F. Montobbio, *University patenting and scientific productivity: a quantitative study of Italian academic inventors*, „European Management Review”, 2008, Vol. 5, pp. 91–109.

¹⁴ N. Baldini, *University spin-offs and their environment*, „Technology Analysis and Strategic Management”, 2010, Vol. 22, pp. 859–876; M. Colombo, D. D’Adda, E. Piva, *The contribution of university research to the growth of academic start-ups: an empirical analysis*, „Journal of Technology Transfer”, 2010, Vol. 35, pp. 1–25; R. Fini, R. Grimaldi, G.L. Marzocchi, M. Sobrero, *The Determinants of Corporate Entrepreneurial Intention within Small and Newly Established Firms*, „Entrepreneurship Theory and Practice”, 2012, Vol. 36, pp. 387–414; A. Lockett, D. Siegel, M. Wright, M.D. Ensley, *The creation of spin-off firms at public research institutions: managerial and policy implications*, „Research Policy”, 2005, Vol. 34, pp. 981–993; N. Moray, B. Clarysse, *Institutional change and resource endowments to science-based entrepreneurial firms*, „Research Policy”, 2005, Vol. 34, pp. 1010–1027; A. Piccaluga, *From Profs to Profits*:

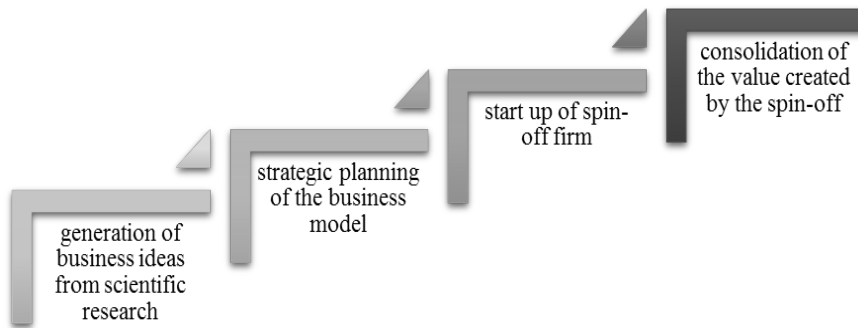
- the relationship between legislative reforms in intellectual property, university policies and commercialization of research results¹⁵.

Studies have shown that the poor performance of companies originating from Italian universities¹⁶ was mainly attributable to:

- continued employment of many founders at research institutions,
- paucity of financial resources,
- limited managerial skills.

As regards the aspects related to the exploitation of research, on the other hand, there are four phases illustrated in figure 1.

Figure 1. The four steps of spin-off valorization process



Source: author's own research from Ndonzuau, Pirnay, & Surlemont (2002)¹⁷.

Further studies have shown that the creation of spin-off firms can be positively influenced by the prestige enjoyed by certain universities¹⁸.

Moreover, some authors have shown that in the presence of universities with high quality research and medium/large entities, spin-offs can play a key role in the start of technology transfer processes and for the development of the entrepreneurship¹⁹ in local contexts, such as those in Southern Italy, characterized by limited technological development.

This appears to be confirmed in some southern regions, such as Campania, Apulia and Calabria, where new high-tech entrepreneurship has been developed²⁰.

How Italian Academics Generate High Technology Ventures, „Creativity and Innovation Management”, 1992, Vol. 1, pp. 87–94.

¹⁵ N. Baldini, R. Grimaldi, M. Sobrero, *Institutional changes and the commercialization of academic knowledge: A study of Italian universities' patenting activities between 1965 and 2002*, „Research Policy”, 2006, Vol. 35, pp. 518–532.

¹⁶ B. Chiesa, A. Piccaluga, *op.cit.*, pp. 329–340.

¹⁷ F. Ndonzuau, F. Pirnay, B. Surlemont, *A stage model of academic spin-off creation*. „Technovation”, 2002, Vol. 22.

¹⁸ B. Van Looy, P. Landoni, J. Callaert, B. Van Pottelsberghe, E. Sapsalis, K. Debackere K. *Entrepreneurial effectiveness of European universities: An empirical assessment of antecedents and trade-offs*, „Research Policy”, 2011, Vol. 40, pp. 553–564.

¹⁹ E. Bellini, G. Zollo, *Technology Based Entrepreneurship: Academic Spin-offs in Less Developed Areas*. /In:/ *Innovation and Economic Development*, Ed. by: J. Mitra, P. Formica, OAK Press, London 1997.

²⁰ E. Bellini, G. Capaldo, M. Raffa, G. Zollo, *Strategic paths of small firms: a competence based approach to Academic-Spin-Offs*. /In:/, *Advances in Applied Sciences*, Ed. by A. Heene, R. Sanchez, JAI Press, Greenwich 2000, pp. 25–40.

Sampling and empirical evidence

In the light of the above-mentioned considerations, it was considered useful to carry out an empirical study focused on spin offs promoted by public universities in Sicily (Catania, Messina and Palermo).

The construction of the sample was divided into two phases.

The first phase involved a screening of the websites of the universities concerned, through which it was possible to identify a first set consisting of 34 spin-off companies (accredited following a resolution passed by the relevant university governing body).

The second phase provided for the involvement of those responsible for the Industrial Liaison Office (ILO) of each university, contacted through the email service.

Table 1. Sicilian University Spin Offs

University of Catania	University of Messina	University of Palermo
Bench S.r.l.	C.r.e.e.s. S.r.l.	Abiel s.r.l.
Biotech Ltd S.r.l.	Charybdis Vaccines S.r.l.	APWonders s.r.l.
C3SL S.r.l.	Chromaleont S.r.l.	Biosurvey s.r.l.
EarTherm S.r.l.	Geologis S.r.l.	CyclopusCAD s.r.l.
EcoStat S.r.l.	Multimodal imaging lab activities S.r.l.	Diasis s.r.l.
Etnalead S.r.l.	Scenari S.r.l.	E Lab s.r.l.
Etnamatica S.r.l.	Science 4 life S.r.l.	F MOM s.r.l.
GEI S.r.l.	Scylla biotech S.r.l.	InformAmuse s.r.l.
Hibas S.r.l.		Intelener s.r.l.
Ibregens S.r.l.		Mirc s.r.l.
Microsensor S.r.l.		NeuroTeam S.r.l.
Petalo S.r.l.		PADesign s.r.l.
S.M.S. S.r.l.		SBSkin s.r.l.
Spin Tech S.r.l.		New Digital Frontiers S.r.l.
		In.Sight S.r.l.
Total = 14	Total = 8	Total = 15

Source: author's own research.

In particular, the required information related to the following aspects:

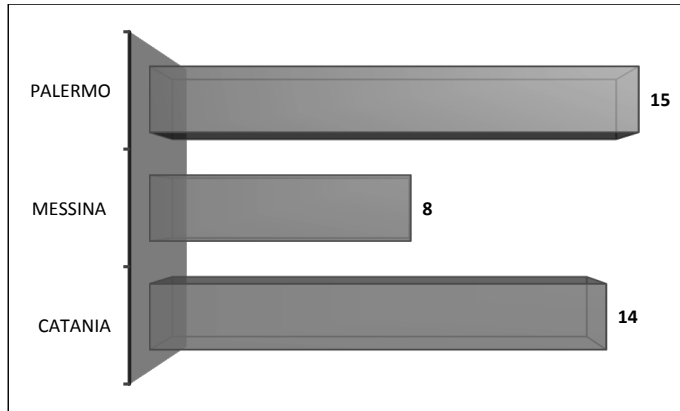
- Number of spin-offs activated as of April 30, 2015,
- Year of the resolution by governing bodies of the University,
- Number of spin-offs active as of April 30, 2015,
- Year of establishment of the firm,
- Composition of the shareholders,
- Sectors of business,
- Financial Statements (or main financial data) of the last three financial years.

With the information gathered, it was possible to further expand the number of selected companies and define the sample under observation, which was thus composed of 37 spin-offs (see Table 1).

The study, although susceptible to extension and refinements, was designed to address some critical issues relating to the model of public research spin-off.

The first fact that emerges is the small number of spin-offs accredited by Sicilian universities.

Figure 2. Spin Off numbers by University



Source: author’s own research.

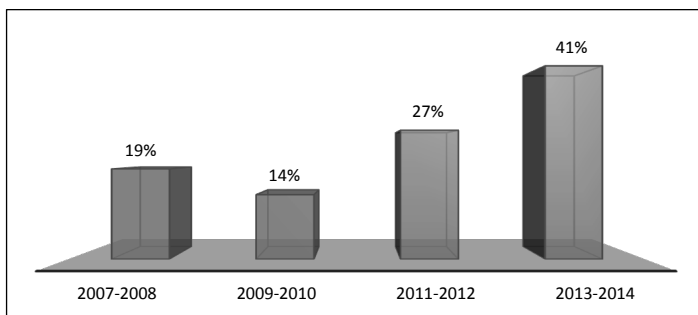
According to the survey recently published by Netval²¹, in fact, the spin off assets from Italian universities number over 1123, whereas only 37 are recorded from Sicilian universities, equal, thus, to around 3% of the total.

However, Figure 3 shows a growing focus of Sicilian universities on the phenomenon investigated. Indeed, over 25 spin-offs out of the 37 detected have been approved in the past four years by the governing bodies of the respective universities. This is probably linked to the growing weight of the so-called "Third mission" as part of Quality Assessment Research (VQR).

With reference to the type of spin off, the analysis shows that as many as 86% appear to be academic, while only 14% pertain to university spin-offs.

In this regard, it can be observed that the latter type is present only at the university of Catania. It should be noted, however, that – as emerged from the interviews conducted with the heads of the ILO – the absence of equity investments of the other two universities is probably due to the small amount of financial resources available.

Figure 3. Academic year of spin-off approval



Source: author’s own research.

²¹ NetVal, *Survey – NetVal*, Netval.it: <http://www.netval.it/servizi/survey/>, 2015.

As for the areas of activity in which the businesses examined operate (Figure 4), there is a clear majority for the service sector (27% of the total), with a strong orientation towards consultancy.

Equal importance can be attributed to the area of Health in a broad sense (diagnostic, pharmaceutical, etc.), Information and Communication Technology, applied to the field of cultural heritage, as well as activities related to Energy Efficiency (with particular reference to the development of new building techniques).

In order to gather more information about their actual operation and the degree of innovation of their activities, it was considered useful to verify how many of the spin-off firms under investigation were in the list of Innovative Start Ups.

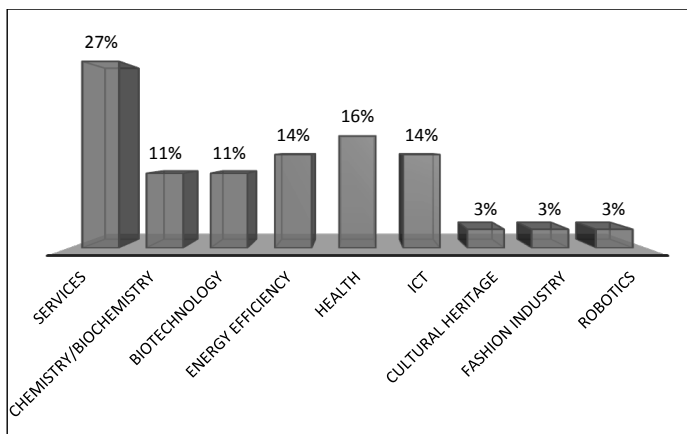
The figure that emerges is certainly not very encouraging, given that only 4 of the 37 selected firms were recorded (2 from Catania and 2 from Palermo).

Finally, the paper is sets out to study the structure and the main economic and financial indicators of the firms examined. From the data collected, properly integrated with information found in the database of the Italian Business Register, we do not find any industrial partners that can offer a significant contribution in terms of financial resources and/or managerial skills. Indeed, shareholdings are owned almost exclusively by researchers and university professors, often from fields other than economic and legal studies.

In line with the national trend, the spin-offs promoted by Sicilian universities have an average of 4 members.

The share capital is not far from the minimum required by law, with an average value of about 12,000 Euros.

Figure 4. Business sectors of Spin Offs



Source: author's own research.

Even as regards income performance, the results recorded are not very encouraging. Except for a few cases (among others Chromaleont Srl), the vast majority record either losses or very small profits.

Conclusion

This paper, although preliminary, has attempted to highlight some critical issues relating to public research spin-off firms.

The results of the study, with reference to Sicilian universities, showed poor economic and financial performance, with considerable undercapitalization and paucity of revenues.

These firms are characterized by difficulties typical of startups, showing weaknesses with regard to the generation of innovative ideas and the construction of an appropriate business model.

In particular, although recent studies have emphasized greater involvement of industrial and financial partners within the social structures of spin offs²², it should be noted that this improvement is clearly insufficient and inadequate, especially in southern Italy and thus including the spin-offs that have been studied in our survey.

These observations seem to confirm the problems already indicated in literature and cast doubt upon the validity of the public research spin-off model so far adopted in Italy.

The success of a business, after all, cannot be explained merely by innovative scientific-technological capacity. In fact, it is also the result of a set of entrepreneurial skills and capabilities, in addition to appropriate managerial skills, resulting in the establishment of solid contacts and relationships within the environment in which the firm operates, and particularly with its stakeholders.

Moreover, the successful business models developed by various universities (including the University of Virginia) requires the participation in the share capital of one or more businesses in order to obtain approval of the spin off by the university boards.

These firms, in addition to the financial resources contributed, must also bring the knowhow needed to develop the potential of the business idea, translating it into a business capable of succeeding on the market and thriving independently over time.

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²²F. Lazzeri, A. Piccaluga, *Le imprese spin-off della ricerca pubblica: convinzioni, realtà e prospettive future*, „Economia e Società Regionale”, 2012, Vol.115, pp. 43-65.

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Appendix 1. Sicilian University Spin Offs by Sector

ID	Name	Year	Sector	University
1	Abiel s.r.l.	2011	Biotechnology	Palermo
2	APWonders s.r.l.	2013	Energy efficiency	Palermo
3	Bench S.r.l.	2011	Services	Catania
4	Biosurvey s.r.l.	2008	Services	Palermo
5	LTA Biotech S.r.l.	2010	Chemistry/Biochemistry	Catania
6	C.r.e.e.s. S.r.l.	2012	Chemistry/Biochemistry	Messina
7	C3SL S.r.l.	2007	Health	Catania
8	Charybdis vaccines S.r.l.	2014	Health	Messina
9	Chromaleont S.r.l.	2007	Chemistry/Biochemistry	Messina
10	CyclopusCAD s.r.l.	2008	ICT	Palermo
11	Diasis s.r.l.	2008	Cultural Heritage/ ICT	Palermo
12	E Lab s.r.l.	2009	Services	Palermo
13	EarTherm S.r.l.	2014	Energy efficiency	Catania
14	EcoStat S.r.l.	2014	Services	Catania
15	Etnalead S.r.l.	2009	Biotechnology	Catania
16	Etnamatica S.r.l.	2011	Robotics	Catania
17	F MOM s.r.l.	2011	Fashion industry	Palermo
18	GEI S.r.l.	2009	Energy efficiency	Catania
19	Geologis	2013	Services	Messina
20	Hibas S.r.l.	2012	ICT	Catania
21	Ibregens S.r.l.	2011	Health	Catania
22	InformAmuse s.r.l.	2010	ICT/Cultural Heritage	Palermo
23	Intelener s.r.l.	2011	ICT	Palermo
24	Microsensor S.r.l.	2008	ICT/Hi-Tech	Catania
25	Mirc s.r.l.	2011	Health	Palermo
26	M.I.L.A. s.r.l.	2013	Health	Messina
27	NeuroTeam S.r.l.	2014	Services/ Health	Palermo
28	PADesign s.r.l.	2013	Energy efficiency	Palermo
29	Petalo S.r.l.	2014	Health	Catania
30	S.M.S. S.r.l.	2013	ICT	Catania
31	SBSkin s.r.l.	2013	Energy efficiency	Palermo
32	Scenari S.r.l.	2011	Services	Messina
33	Science 4 Life S.r.l.	2014	Biotechnology	Messina
34	Scylla Biotech S.r.l.	2014	Biotechnology	Messina
35	Spin Tech S.r.l.	2008	Chemistry/Biochemistry	Catania
36	New Digital Frontiers S.r.l.	2014	Services	Palermo
37	In.Sight S.r.l.	2014	Services	Palermo

Zbigniew Makiela

Andrzej Frycz Modrzewski Krakow University, Poland

THE NETWORK STRUCTURE: THE MANAGEMENT INFRASTRUCTURE OF AN INNOVATIVE CITY AND REGION

Summary

The network structure is the management infrastructure of modern cities and regions that introduce innovative management concepts when undergoing the restructuring process. Currently, a common trend is to move away from a hierarchical organisational structure to the management based on the network structure. The reason for such activities is the functional disintegration of the traditional region.

The process of networking can be observed in the regions which have or initiate modern enterprises, universities, research, advisory, financial and design institutions. The reason for networking in the regions are changes taking place there that result from the regional strategy, innovation of the local government, development of computer networks, innovative attitude of residents, improvement in residents' standards of living, perceived as a result of regional innovation.

* * *

Introduction

Innovative cities and regions are centres of innovation and economic growth and they influence the following: the rate of development of national economies, the amount and structure of GDP, the movement of capital and labour, the use of local resources, and the international relations in regard to trade. This is due to the fact that research institutions, laboratories and universities, as well as enterprises that use modern technologies are primarily located there. Besides, cities concentrate a huge potential of knowledge, requiring proper management by residents who are prepared for this and are referred to as human capital and social capital¹.

¹ T. Kazimierczak, *Kapitał społeczny a rozwój społeczno-ekonomiczny – przegląd podejść* [The social capital and socio-economic development: An overview of approaches], [in:] *Kapitał społeczny. Ekonomia społeczna* [Social capital. Social economy], T. Kazimierczak, M. Rymsza (eds.), Instytut Spraw Publicznych, Program Polityki Społecznej, Warsaw, 2007.

Regions and cities are also places where problems occur, such as unemployment, poverty, deterioration of buildings, pathology and social exclusion².

When treating a region or a city as innovative and entrepreneurial entities, it can be assumed that they are potentially self-sufficient organisations. This means that creating and acquiring development factors (human capital, social capital, financial capital, funds, investments, etc.) should result from the inner strength (the potential) of regions and cities. It should be assumed that innovative regions build network structures. They create conditions for modern management methods based on network management. Creating modern structures of organisations that are characterised by high autonomy and speed in decision-making and conclude alliances in order to implement a particular project should be encouraged. Innovative regions are seen as modern elements of the European network structure, and their main role is to attract new partners who make regional network connections more dynamic.

Regional network infrastructure

The network structure is used in modern regions that break with the traditional organisational solutions and introduce new ways of managing, that is such regions which base their operation in network management. A departure from the organisational structure typical of the industrial era towards the network structure can be observed nowadays³. The reason for such activities is the functional disintegration of the traditional region. The functional restructuring of regions can be noticed. The traditional industrial and agricultural functions are replaced by the innovative functions based on higher-level services (banking, accounting, legal services, tourism, etc.) and innovative high-tech industries (pharmaceuticals, aeronautical industry, biotechnology, etc.). The consequence of changes in the regional functions is the transformation of social structures (import of specialised human capital, rebuilding of social capital structures). There are more and more organisations that consists of, for example, unions of independent employees or entities that make decisions to cooperate with universities and R&D centres. The emerging new organisational structures are characterised by a high decisional independence, speed and autonomy of decision-making, higher product quality and more effective management. The number of networking regions is increasing rapidly. The process of networking can be observed in the regions which have or initiate modern enterprises, universities, research, advisory, financial and design institutions. The reason for networking in the regions are changes taking place there that result from the regional strategy, innovation of the local government, development of computer networks, innovative attitude of residents, improvement in residents' standards of living, perceived as a result of regional innovation. A national and international environment has a significant impact on the development of regional innovation. The perception of the region environment is very important: whether the environment is seen as one that can contribute to obtaining benefits by regional entities so is a source of additional benefits; whether the environment causes blurring of interregional boundaries or the boundaries that are characteristic of intelligent and virtual organisations. The immediate surroundings are seen as these which consist of stakeholders inside and outside the region, and such people in turn are a source of additional benefits.

Inner-regional and interregional networking has a positive impact on generating competitiveness. Increasing the degree of cooperation with external partners from other regions or states allows for making direct contact between stakeholders, and thus achieving the effect of synergy. The network consists of

² A. Majer, *Współczesna urbanizacja, przemiany i szanse rozwoju miast [Contemporary urbanisation, changes and opportunities of urban development]*, [in:] *Człowiek – miasto – region. Związki i interakcje [Man – city – region. Relationships and interactions]*. Księga Jubileuszowa Prof. B. Jałowieckiego, Gorzelak G., Szczepański M.S., Ślęzak-Tazbir W. (eds.), Wydawnictwo Naukowe Scholar, Warsaw, 2009.

³ A.K. Koźmiński, W. Piotrowski, *Zarządzanie. Teoria i praktyka [Management. Theory and practice]*, Redakcja Naukowa WN PWN, Warsaw, 2004, p. 78.

units that are cooperatively related, self-managed (self-governed communes, districts and provinces) and focused on processes (companies, universities, etc.).

Referring to a region as being a learning organisation, it needs to be treated as a structure built on the basis of autonomous network or self-governed communes, while in the case of intelligent regions there is no hierarchical subordination but it is based on the relationship of roles and is subordinate to the implementation of processes. Today, there are two groups of surroundings for the region. The first group has a direct impact on the region, while the other – indirect⁴.

The immediate surroundings consist of stakeholders associated not only with the region, but also interconnected with each other through a network of relationships. There are four types of interregional networks:

- integrated networks, which consist of local government units (communes, provinces) that by law and administratively belonging to one organism (region),
- correlated networks, meaning groups of different local government units which are aware of the common needs and wish to create their own ways to fulfil them,
- contract networks regarding public and private partnerships which are statutorily independent and where cooperation is based on agreements,
- direct contact networks, most often occurring between local government entities and social and economic life entities.

Network management requires a change in the rules, measures and methods used so far in managing the region. Changes in education, competences and attitude of the current staff, as well as people with new skills are necessary. The leaders of local government authorities also faced new tasks that are the resultant of several factors:

- modern requirements (competition-oriented) towards rank-and-file workers,
- change in the incentive system of employees,
- change in the style of local governance, leadership building,
- change in the organisational culture.

Innovation networks

Innovation networks⁵ in Europe can be found at three levels: regional, national, European. A small percentage of companies participates in global networks, although the European Union in the Lisbon Strategy and subsequent Framework Programmes supports the European networks with great determination. Most of the networks generating innovations, however, are present at the national level. Innovation networks at the national level are implemented through horizontal interactions between: enterprises, organisations and residents. At the regional level, collaboration of companies is realised primarily with universities, training and consulting institutes and organisations, as well as regional and communal governments. At this level, there is a different scale of relations. The most important relationships are with research institutions and organisations that fund innovation. However, innovation networks tend to close when at the mentioned levels, there is turbulence in smooth connections. Therefore, it is a very important task for local government institutions to strive to create and maintain openness of innovation networks⁶.

⁴ *Zarządzanie firmą [Company Management]*, H. Ferens (ed.), Polskie Wydawnictwo Ekonomiczne, Warsaw, 1999, p. 43.

⁵ Networking – independent entities are grouped in a way that is: spontaneous (based on the principles of cooperation on the market), supported by the public authority, e.g. in the form of clusters, forced by the government or the dominant cooperator. As a result of the grouping, a relatively stable network is formed.

⁶ Tools and factors that ensure sustainability of networks are: business bond confirmed by co-operation contracts, bonds associated with friendship and trust, capital and property bonds (shares of the common ownership, mutual ownership).

Building the innovative potential is possible with the use of properties of innovation networks⁷:

- networks facilitate access to complementary, supplementary knowledge,
- learning process of the company can take place thanks to the cooperation and the use of external knowledge,
- within the network, knowledge and information for different types of innovation can be exchanged. The exchange can range from informal sharing of information to the joint implementation of innovative projects,
- research institutes contained in the network are not only a source of knowledge and information, but also, thanks to the branched connections, a bridge to other networks,
- decentralised knowledge and innovation coordination reduces the risk of accidental acquisition of external knowledge and help identify and apply the correct knowledge,
- spatial proximity is important in quiet non-codified knowledge transfer⁸.

In the face of globalisation, growing importance of such categories and concepts like knowledge economy and e-commerce, as well as the development of high-tech sector, the question arises on how much the contemporary conditions for business, cities and regions affect gaining their competitive advantage and to what extent, due to changes in the market and competitive environment, there are new potential determinants of competitive advantage.

The rapid pace of changes and increasing complexity of the environment significantly limit the autonomy of the actions of individual entities and their managers and force them to search for sources of competitive advantage beyond the internal borders of various organisational structures, as well as beyond the borders of a country. However, despite highlighting in the literature the importance of cooperation and connections between enterprises, the network approach is very little used to explain the process of gaining the competitive advantage of cities and regions. The network approach as a new concept of cooperation between economic entities in the regions was created in the late 1970s. It emphasises the importance of the whole regional contact with the surroundings that creates an extensive network of relationships, business networks⁹.

Creating the infrastructure of networking

Millions of people network not just to make social contacts. Professionals know that networking enables them to succeed professionally and gain support in business. Assistance in establishing valuable contacts is offered by, among others, social networks of a business profile.

Apart from the wish to conclude alliances between companies, it is significant to build a network of personal relationships. Contacts with a diverse group of current and potential stakeholders of the company are at the very core of the manager's role. Forming relationships is part of the job and it is not an easy job. One of the most difficult aspects of strategic networking is that it is often impossible to

Networks disintegrate when: any of the links does not meet the expectations of others (dismissal), the network does not meet the requirements of one of the links (abandonment).

⁷ *Innovation networks: Concepts and challenges in the European perspective*, K. Koschatzky, M. Kulicke, A. Zenker, (eds.), Physica-Verlag-Springer, Heidelberg, 2001, pp. 7–9.

⁸ R. Domański, *Ewolucyjna gospodarka przestrzenna [Evolutionary spatial economy]*, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań, 2012, pp. 109–110.

⁹ Business networks are alliances between companies that are working together on the implementation of essential economic goals. They can be established between SMEs in clusters, but there are also present outside clusters. Networks can be horizontal and vertical. Horizontal networks are built between companies that compete in the same market. They include e.g. producers' groups "serving" together retailers in the region X. Vertical networks concern in particular the development of delivery systems, alliances between companies belonging to different levels of implementation of tasks in the same chain of values.

find a natural “pretext” to contact someone in a higher position in another department or organisational unit. Some successful managers find the common ground, choosing a roundabout way, for example, by making their private interests a domain of strategic contacts, even using online communities of practice. However, one should keep in mind that a network of contacts is alive and develops only when it is in use.

Networking is more a matter of will than skill. To make contact, one needs neither a talent, nor a social extroverted disposition. This is a skill that requires training. Managers who aspire to be leaders have to learn to build and use a network of strategic contacts that cross the borders of organisational units and business functions, and then combine them in a new and innovative way. Successful business leaders spend an enormous amount of time every day collecting the information needed to achieve the set goals and they base on informal discussions with many people who are not necessarily responsible for a given problem or task at work. They communicate in this way in order to obtain the information continuously, not just during formal meetings. For many managers, to have a good network of contacts means the same as having a large contact database or participating in prestigious conferences and events.

The city as a network organisation

Network organisations (inter-organisational network, inter-firm, network, network organisation) are an organisational phenomenon, whose origins should be associated with cooperative systems. Cooperative systems are not the same as inter-organisational networks. While the aims of cooperative systems can be characterised as tactical and even operational, the goals of network systems are of a strategic nature.

Network organisations or – alternatively – inter-organisational networks are closely related to the concept and practice of corporate strategy and are established with a view to implement a specific strategic goal, which only secondarily translates into tactical and operational actions, constituting a further development of the strategy. Inter-organisational network is defined as a system of cooperation between organisations that are independent in organisational and legal terms and connected by the common capital or not, but always based on the synergistic potential of network entities in one area of functioning or more, as well as wider cooperation than a single exchange. Therefore, inter-organisational networks are characterised by processes of mutual coordination. If the network entities depend on the capital of one another, it does not serve building a portfolio of investments, but securing the effectiveness of cooperation.

Organisational characteristics of the network are primarily: mutual coordination of activities and alignment in the area of operational procedures, technology, infrastructure, etc., which is the internal structure of the organisation that is not present in the classical market exchange; decisions regarding resources are made not only individually, but also together in a specific area of cooperation; repetitive nature of the exchange and cooperation plans covering a longer time horizon; a large range of information on cooperate partners available to network entities.

The network structure should allow for the rapid reconfiguration of the participants in the network organisation, ensure a high level of flexibility in decision-making and execution, allow for maintaining the balance between order and chaos, the implementation of tasks by the most competent links, ensure the coordination of activities, contribute to the development of effective communication and information flow, allow for the processes of acquisition, transfer and usage of knowledge, provide excellent communication between the organisation and the environment, make functioning within the limits of the reporting chain procedures possible, and enable people involved to establish quite close, independent and direct relations of a social nature based on trust.

The organisational structures of the network configuration are characterised by the lack of organisational hierarchy, the absence of the management and subordination, the domination of information and cooperation links, the temporariness of arrangements when it comes to the duties, powers and

responsibilities of the members, the specialisation based on the interests of members, and the minimum degree of formalisation of activities.

A well-functioning network is the one that: (cf. Fig. 29) has the support of the authorities, but it does not appoint authorities itself; its members have common goals, clearly defined performance objectives about what individual members of the network give and what they take; there is a balance; it flexibly responds to the needs of members; is financially and administratively supported; has developed a way to communicate between members; can interact seamlessly with other networks; its members are enthusiasts who inspire themselves and others to act and coordinate the implementation of tasks and specialised networks, when they have excessively spread; it acts openly; regularly analyses whether members' needs are met; undertakes enterprises at the time and place that are convenient for its members; is open to accepting new members, treating it as a situation conducive to introducing the invigorating spirit to teamwork and creating new ideas; can remain relatively small organisations or to be divided.

Network organisations have the following attributes: they are characterised by flexibility within a domain; are systems of strategic cooperation within which a strategic plan is implemented; are based on the synergistic potential of partners; extend the opportunities to make strategic choices; are oriented to the long cooperation, but with the implementation of specific projects.

At the same time, network solutions are based on social bonds, which is extremely important from the point of view of creating inter-organisational networks. It can be said that to some extent thanks to social bonds networks grow, last and recover (also transform into competing groups and disintegrate). Inter-organisational networks are characterised by flexibility relating to the opportunities to change the domain. Due to the fact that partners in the network are independent entities, it is easier to reconfigure the system. From the point of view of market rivals who are external to the network, the competitive struggle with the network is extremely difficult. It is due to the fact that within its framework, there are different approaches, different marketing strategies, and different forms of organisation represented within the same domain, and the collapse of one or more companies basically do not weaken the whole structure. New companies enriched with the experience of their predecessors immediately appear in their place.

Conclusion

When perceiving a region and a city as innovative and entrepreneurial entities, it can be assumed that they are organisations with the high social and economic potential. This means that creating and acquiring development factors (human capital, social capital, financial capital, funds, investments, etc.) should result from their inner strength (the potential). The study has demonstrated that innovative regions are more efficient in building network structures. They create conditions for modern management methods based on network management. Entrepreneurial and innovative regions are characterised by a modern organisational structure, large autonomy and speed in decision-making, as well as they conclude alliances to carry out a specific project. Innovative regions are seen as modern elements of the European network structure, and their main role is to attract new partners who make regional network connections more dynamic.

In conclusion, it should be considered that the thesis formulated, saying that in building the strategy of the region's economy development, the development of entrepreneurship and innovation are assumed to be one of the most relevant factors of economic growth, has been proven scientifically.

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Grażyna Plichta

Cracow University of Economics, Poland

TRUST AS A FACTOR DETERMINING THE CO-CREATION OF VALUE IN TRANSACTIONS CONCLUDED VIA THE INTERNET*

Summary

The paper is devoted to the role of trust in the process of making decisions on the market and the impact the trust factor on the co-creation of value in transactions concluded by consumers outside stationary points of sales. It discusses the significance of trust as an important element in the process of building permanent relationships with customers. Two elements which build trust between parties to transactions when they are concluded by means of the Internet have been distinguished. Moreover, the paper attempts to define the co-created value arising from the interaction between the buyers themselves, and the problem of co-creating value in social networks.

* * *

Introduction

The occurrence of mutual trust between parties to a transaction is an important element in the process of building permanent relationships with customers. Trust is particularly required when the platform of broadly understood exchange between parties to a transaction has a virtual dimension, and transactions are concluded via the Internet. The specificity of online transactions is the reason for which people do not contact the seller directly but they only receive an “image” of the product/service and the promise that it fulfils some declared qualities. In the situation when there is no direct contact not only with the object of the transaction but also with the seller, a high level of trust between the parties to the transaction is necessary for the “distant” transaction/purchase to be concluded.

The paper attempts to distinguish elements which build trust when transactions are concluded via the Internet. It also attempts to define co-created value arising from the interaction between the parties to the transaction and the buyers themselves, and co-creating value in social networks.

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The impact of trust on the conclusion of transactions by means of the Internet

Trust is the key factor of relations. According to Lewicki and Bunker, both in the case of the majority of business relations no success can be achieved without trust². The presence of trust influences the lowering of uncertainty and risk, thus, it influences the reduction of the time of preparing to the relation between the subjects³. In the event of the lack of trust, a transaction can be concluded only under the supervision of the system of formal rules and regulations⁴. Also the relation with customers, which is an element of the promise management concept proposed by Ch. Gronroos, is based on trust⁵. The concept is embedded in the dynamically developing service–dominant logic – the theory of co–creating value with customers. For the first time, the bases of the service–dominant logic concept were presented by Vargo and Lusch, treating this concept as the opposition to goods–dominant logic⁶. What is specific for the process in service–dominant logic is the simultaneousness of consumption and production, which appoints the role of the customers as the “service co–producer” and positions it at the same time on the side of the resources used to support value–in–use created by the customer.

Today, with almost unlimited access to digital technology, the platform of broadly–understood exchange has a virtual dimension. The conclusion of transactions by means of the Internet is a special example of activities in which trust between the parties to the transaction is necessary. It should be emphasised that the presentation and sale of products and services to customers by means of electronic media (electronic retailing) is a quality of the evolution of transaction conclusion methods, which has taken place in the contemporary commerce exactly by means of the Internet. The phenomenon of “Internet commerce” is defined in many ways. Most often this process is understood as an electronic commercial transaction concluded without the participation of direct contact between the parties, and often with making appropriate payments with the omission of material information media and declaration of will⁷. The quality of electronic commerce is its global character, which is significant both for sellers and for buyers. In the relations between firms and individual recipients transactions are most often concluded by means of e–mail and websites⁸. Online shopping is characterised, among others, by the fact that customers cannot touch products, they do not contact directly the party to the transaction, they only receive the “image” of the product and the promise that it fulfils the declared qualities. A “distant” transaction is also related to the necessity of sending so–called sensitive data by the Internet, e.g. personal data, payment card numbers, etc. To make the consumer share his personal data and do shopping without direct contact with the product and the seller, the element of trust is necessary. To increase trust to online shopping various actions are taken and procedures are implemented, e.g. the introduction of secure forms of payment, the electronic system of direct payments, special payment cards to settle liabilities in the Web. Creating

² R.J. Lewicki, B.B. Bunker, *Developing and maintaining trust in work relationships*. /In:/ Trust in organizations: frontiers of theory and research, Ed. by R.M. Kramer, T.R. Tyler, Sage Publications, 1996, pp. 114–139.

³ A synthetic overview of theories concerning trust, starting from precursors of the sociological approach to this category and ending with approaches from the perspectives of other disciplines, also from the perspective of economics, among others in: P. Sztompka, *Socjologia, Analiza społeczeństwa*, Społeczny Instytut Wydawniczy ZNAK, Kraków 2004, pp. 308–327.

⁴ M. Laske, H. Neunteufel, *Vertrauen eine „Conditio sine qua non“ für Kooperationen?*, Wismarer Diskussionspapiere, Hochschule Wismar, Fachbereich Wirtschaft, Heft 01/2005.

⁵ Ch. Gronroos, *In Search of New Logic for Marketing. Foundations of Contemporary Theory*, John Wiley & Sons Ltd., London 2007.

⁶ S.L. Vargo, F.R. Lusch, *Evolving to a New Logic for Marketing*. /In:/ “Journal of Marketing” 2004, Vol. 68, Issue 1, pp. 1–17.

⁷ J. Barta, R. Markiewicz, *Internet a prawo*, Wyd. Universitas, Kraków 1998, p. 90.

⁸ W. M. Grudzewski, I.K. Hejduk, *Przedsiębiorstwo wirtualne*, Wyd. Difin, Warszawa 2002, p. 148.

trust in electronic commerce is related to building the comprehensive strategy of Internet stores and it undoubtedly exceeds technological and legal issues. Building trust in electronic commerce is aimed, among others, at:

- successive reduction of uncertainty and risk related to an online transaction,
- persuading a potential customer to conclude the transaction,
- increasing loyalty of won customers,
- deepening the relationship with won customers,
- improving customer satisfaction,
- successive collection of information enabling long-term relationships with customers.

For businesses functioning in so-called virtual space, in addition to winning potential customers, caring about already won/existing customers and transforming them in so-called spokespeople, namely people recommending the firm to others, should be the priority. One of the paths which may lead to achieving such an aim is the best possible opinion from so-called e-customers. Moreover, success is guaranteed by the highest quality of the products offered and proper service which contributes to a bigger number of people visiting the website and at the same time an increase in the number of concluded transactions.

The process of building trust in electronic commerce is an extremely important and at the same time a complex process. The customer's decision is an effect of his "confrontation" with information passed by means of the store site. So that the transaction could not be interrupted and come off, a potential customer must feel that he has a contact with a solid, trustworthy partner, a virtual but still a professional seller who can resolve any doubts which can appear during the process of making a decision about the purchase. Plausible communication by means of the store site should include the following elements:

- complete and reliable information about the firm,
- complete and reliable information about products/services,
- complete and reliable information necessary to finalise the transaction, e.g. the methods of payments, delivery times and methods, complaints, etc.,
- a possibility to certify authenticity,
- an ability to navigate the site easily,
- a possibility to confirm the orders placed,
- recommendations.

In the commerce fulfilled via the Internet, the key element is undoubtedly the moment of taking the decision about the purchase (so-called click). Without trust to the seller, trust to the product/service, method of payment, that, e.g., the payment by credit card will be safe, such a decision will not be taken. The majority of contacts and transactions on the market are those which are concluded with trusted entities. However, it does not mean that without trust a transaction is not possible since consumers often search for so-called bargains and decide to conclude a transaction in the situation of the lack of trust.

The presence of trust in each moment and in each form is beneficial and desired. The aim to be achieved is not only potential but also settled trust. Potential trust is influenced by the reliability of the firm, meeting individual needs and safety. Settled trust arises mainly from satisfaction. To maintain settled trust, it is necessary, among others, to:

- successively educate customers (particularly in services trust is the function of the perceived quality and education of customers). It is assumed that an increase in customer education entails the growth of trust,
- make necessary, permanent changes in infrastructure, e.g. related to innovations, investments, a change in the image,
- personalise the message, service (it is particularly important in transactions wholly concluded by means of modern technologies),
- apply quality certificates,

- successively broaden the offer, improve its attributes and availability,
- articulate trust directly to customers.

Co-creating value – the outline of the problem

On the contemporary market there is a broad offer of various goods and services available. Certainly, it is related to significant, measurable benefits for consumers. However, such a situation causes uncertainty in many of them, arising, among other things, from the fact that they are not sure whether they have made the right choice. Moreover, in addition to a successively increasing offer of available goods and services, there is also broad access to information and a possibility to get it from different sources. It takes place at a lower cost than ever before (e.g. by means of websites, telephones, tablets, etc.). At the same time, quite often there are limitations for consumers, related both to the lack of sufficient amount of time or, quite frequently, insufficient skills needed to order available offers, which evokes frustration in the majority of them. As C.K. Prahalad and V. Ramaswamy put it “*the variety of products has not necessarily brought about the assurance of better experiences to consumers*”⁹. Such a situation is the reason for which contemporary, often frustrated consumers who are equipped with modern tools, e.g. telephones, tablets, etc., and the access to the Internet, want to cooperate with firms, in this way co-creating value. They provide various information not only to each other, but also on their own initiative they provide firms with feedback. Such new challenges of the market are the reason for which the firm which is going to meet its costumers’ expectations should consider their needs and suggestions already at the stage of planning a venture, and not in the phase of implementing it/launching it to the market. Such an attitude makes the customer begin to participate in the value creation process, first by means of individual interactions, and later also owing to gathering experiences. This experience of co-creation has impact on how the costumer perceives the firm and is the basis of value for him. Probably it requires deeper deliberations and discussions, but according to this approach, the firm should focus not on the quality of products and services but on the quality of the experiences of co-creating. It is possible to be achieved owing to the introduction of innovations which will enable to follow the customers’ reactions to changes. A good method is also to build networks of experiences, which will enable to reach individual customers with the offer. According to C.K. Prahalad and V. Ramaswam, the constituents of co-creating value are dialogue, access, risk assessment, transparency – the acronym DART¹⁰. It should be emphasised that co-creating value by the firm and consumers is only possible in the situation of revealing possible risk and potential hazards related to goods and services to consumers. Establishing dialogue aiming at cooperation with consumers facilitates a significant dimension of trust, namely transparency. It is also a platform for building a new level of mutual trust between consumers and the firm.

As it was mentioned before, the problem of co-creating value has appeared in the scientific literature and new business models to a broader scale since the dynamic development of the Internet. It is mainly related to new opportunities and the scope of exchange, as well as the processing and the mass scale use of information by the users of communication and information technologies. The development of the Internet caused the occurrence of economic premises for treating this process by business entities as an important source of value creation. Creating the possibilities to communicate to the global scale, mainly through the effect of scale and the synergy effect, released the layers of information resources and relational resources, and the benefits arising from the operation of dispersed entities. Although the essence of value co-creation touches the bases of the functioning of the processes of social exchange, it also has its place in the processes of economic exchange. However, only the spread of this process in the mass dimension revealed its great possibilities of the transformation of value and its redistribution.

⁹ C. K. Prahalad, V. Ramaswamy, *Przyszłość konkurencji*, Wyd. PWE, Warszawa 2005, p. 13.

¹⁰ Ibidem, pp. 28 – 42.

Various sociological streams, and in particular the social exchange theory reveal the determinism of social development in the necessity of creating and exchanging value by individuals¹¹.

Transactional processes taking place during social exchange have usually a complex character, most often described in the form of a network. The occurrence and the development of communication and information technologies (ICT) enabled to develop complex network links not only among firms (B2B), but first of all between firms and consumers (B2C). At the same time, it enabled the occurrence of network structures whose value arises from the number of nodes, links, the amount of information, the quality of transferred values and a capability of creating permanent relationships being the foundation of social capital. Their basis is trust, reliability and reputation of the entities participating in the exchange. The frequency of transactions concluded on the Internet and the commonness of the access to information enables a better verification of the reliability of entities, and thus building relations based on trust. The emergence of new business models several years ago, based on the creation of social networks, revealed a great potential of social capital in market communication. The resource based view took on a new social dimension, which became the basis for the occurrence of new types of firms operating on the basis of the Internet.

The first elements of the processes of co-creating value could be observed in one of the initial stages of the e-commerce development, namely on the example of the development of Internet banking. New Internet applications which basically included numerous activities previously made by bank workers were taken over from them and made independently by bank clients, e.g. payment services, or managing properties offered within the framework of services. This model of cooperation, taking place according to the principles of the exchange of values (benefits) is among most visible manifestations of co-creating value based on the fulfilment of repeated transactions. Low transactional costs of such an exchange are based on the frequency of transactions, experience, routine and the trust of partners. What is also important is the effect of scale achieved by the firm owing to low marginal costs from making the technology available in the form of equipment and software. The value of the resource which is time, changing for the consumers, (e.g. through an increase in the income) made the alternative cost of concluding transactions in traditional banking become so high that potential costs arising from distrust, as perceived at the beginning, were overcome by disproportionately high costs resulting from saving time. Undoubtedly, time saving and other advantages which are often defined as "comfort of shopping", as well as direct access to information has become a prevalent element of the value provided to buyers, whereas to banks it enabled considerable acceleration and an increase in the number of transactions, as well as the reduction of unit costs.

Co-creating value in social networks

A more complex problem is co-creating value through activities of firms in social networks. While co-creating value within traditional exchange transactions where the business model assumes the inclusion of communication and information technologies (ICT) for their fulfilment can be balanced by the analysis of costs – benefits, in so-called business models based on social networks the exchange does not take place directly. The models evolve along with so-called "maturing" of the Network Participants, who evolve in their development to the role of not only unaware users of tools of entertainment but also to the role of buyers who understand what value they are for the owners of Internet platforms and for the entities entering the Web as parties to transactions. An example in this area is not only Facebook but also Twitter, Pinterest, Instagram, Polyvore, or even LinkedIn or Goldenline which have been treated as non-commercial so far. Those specific social assets and relational capital have taken on a commercial dimension whose value has been noticed by the creators of Facebook or Google. In the case of these

¹¹ More on that in: J.H. Turner, *Struktura teorii socjologicznej*, Wyd. PWN, Warszawa 2008.

platforms, the main essence of a specific kind of transactions was making their own information and technological resources available in return for the access to private resources in the form of personal data, information about consumer behaviours, revealing network links and social relations arising from them. Basing communication on social relations enables more effective transfer of information, sales of products and services owing to permanence based on trust, reliability, reputation, etc. It should be emphasised that nowadays numerous firms are not valued through the book value of their assets but the ability of those assets and the firm itself to generate revenues, maintaining the principle of the effectiveness of activities. Therefore, not links and social relations themselves but their potential ability to absorb information sent by the network participants has become the base for daring investments in the modern technologies sector. However, it should be stressed that creating space for building and developing relations for potential consumers is connected with significant outlays by firms functioning in the Web, which in the long term forces them to regain them, thus making revenues, making profits. The first stage of relational value commercialisation was and still is the activity consisting in enabling to reach the information about products and services to business entities to promote them (e.g. Adwords), or positioning links to websites in search engines. The next stage is including business entities in the social network via the service system of funpage type or a possibility to create corporate profiles on social networking sites. The justification for their creation is often explained by close linking of the Web users with their workplace (such as on Goldenline or LinkedIn platforms), or by benefits which can be achieved from sharing the information about attractive products and services by the circle of one's own friends. This potential arising from the aggregation and distribution of information became the foundation for creating popular business models basing on group shopping (e.g. Groupon) and the benefits achieved on this account by the Web users. When observing the evolution of social networking platforms we can indicate another stage in their development, namely evolution towards purely transactional platforms. It is possible owing to creating new services increasing the possibilities to win users by social networking platforms (i.e. fans, followers, those who like the site, mention it, etc.). More and more often they are places directing users to firm websites. Business entities have noticed in social networks a great potential to win new customers and build permanent relationships with them. It was all the more possible because at the beginning the cost of activities related to it was low, and potential benefits were big. At the beginning, individual users often added themselves to the "fan circle" of a given firm or they were invited to such a circle. However, those were activities which did not enable to achieve large ranges of influence in a short term. For this reason, among others, individual social networking platforms, in the fashion of Google, started to offer intermediate services to reach various groups of users. The first stage in building the number of users was (and still is) an increase in the functionality (benefits) until saturation is achieved. Due to the fact that social exchange is also based on the costs–benefits relations, and economic exchange is its integral part, introducing e.g. adverts by the Platform owners is not understood as "breaching the contract". It is all the more possible because the free use of an Internet platform reveals one of the basic determinants of exchange, namely the reciprocity principle. Besides, it is more and more difficult to separate so-called commercial and non-commercial zones in the Internet space. It should be emphasised that search engines and browsers which are key for moving around the Web support themselves on adverts and positioning, which is obvious for more and more Internet users. They are used to being "seduced" and "followed" by adverts, among others. Yet, it is accepted until it significantly reduces the pleasure and benefits of using the Internet. Therefore, also in the Web net value provided to users is the basis of using a given service. Social networking platforms with narrow service profile for a few years have been transforming towards multi-functional transactional platforms. They are trying to build their own networks of users who have noticed their "network and relational value" and beginning to approach their own privacy and making their own relational resources available in a more and more pragmatic way. The value of transactional platforms as integrators of information is built both based on the values of services offered by them, and on the values of the business partner's

activities, e.g. through the quality of products and services offered, the quality of promotional activities and the number and commitment of users to the conclusion of the transaction.

The trend indicated above shows two faces of the value co-creation process. The first of them concerns co-creating the value of products and services by increasing their net value on the buyer's side, and on the firm's side, generating profits from the transaction. In the other case we deal with permanent relationship between the customer and the firm, as a result of which there is not only direct involvement of the customer in activities bringing him direct benefits, e.g. obtaining information about friends. Relations built by him in the Web also create value in the form of so-called relational assets. While in the first case the value from the transaction was manifested in the form of profit-serving investment, in the other case assets of direct significance for the firm value are created. The business model implemented in this way consists in making resources which enable to introduce as many users as possible to the platform of its own relational values available.

Conclusion

Trust is very important for the processes which take place on the market. As one of the most significant elements of social capital it influences greatly the development of every firm. Consumers must trust businesses, especially the ones with which they commit to co-creating, that is the process of developing common value. For individual entities value is the function of their experiences of co-creation. The dynamic development of the Internet and other modern forms of communication bring about the emergence of still new platforms enabling to develop interactions and facilitating the commitment of customers to co-creating value.

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Pawel Mucha

The School of Food Industry in Kraków, Poland

ENTREPRENEURSHIP AS A FORM OF STIMULATION TO VOCATIONAL DEVELOPMENT OF VOCATIONAL SCHOOL STUDENTS

Summary

Managing one's own person means strengthening the ability to be autonomous, independent and able to dispose one's own resources. It is a practical skill that integrates many different types of knowledge (e.g. life and professional knowledge). The purpose of managing one's own person as a practical field of education is to improve people's understanding of their own aspirations and interests, teach them how to set personal goals and achieve them throughout their lives, under specific conditions and circumstances. Vocational development means appropriate management of one's own time, skills and aptitude. Thanks to the activities undertaken during the learning process, young people develop their talents, gain knowledge and skills. What is important, any professional work, even the one which is not associated with the education possessed, gives meaningful experience. An individual learns how to work in a group, how to be flexible and communicate. These are essential competences highly valued by employers. Vocational development and first steps in the job market are an issue identified with the transition from vocational schooling to working.

* * *

Introduction

Work, career, vocational development are concepts used to describe forms of stimulation to activity among middle and secondary school students. The need to prepare young people for the challenges of the difficult and demanding job market in Poland and beyond it has increasingly been underlined in the literature¹.

¹ Z. Makiela, *Przedsiębiorczość i innowacyjność terytorialna, Region w warunkach konkurencji [Entrepreneurship and territorial innovation. Region in a competitive environment]*, C.H. Beck, Warsaw, 2013, p. 27.

The processes of preparing for the professional activity and acquiring self-awareness are very long and complicated. They begin at the level of secondary school education, when a young person makes their first serious adult decisions. What will be next? Education or work? Or maybe both?

As research reported in the literature, press articles and practitioners' opinions show, a higher education diploma no longer guarantees a good job. A good job, i.e. one that meets the graduate's expectations of being exciting, interesting, compatible with one's predisposition and well-paid. On the other hand, a job that meets the employer's requirements towards the candidate: a graduate with education, experience and a range of interpersonal skills².

Activity in managing one's own person

Starting one's career path, comprising a long and difficult process of identifying one's own expectations and aptitudes, to searching for a job, to being employed and developing professionally, is contained in a comprehensive subject of human resource management. This issue also includes a narrower concept of managing one's own person and related activity.

The term "managing one's own person" means strengthening the ability to be autonomous, independent and able to dispose one's own resources. It belongs to a field of practical skills that integrates many various types of knowledge (e.g. life and professional knowledge). The purpose of managing one's own person as a practical field of schooling is to improve people's understanding of their own aspirations and interests, teach them how to set personal goals and achieve them throughout their lives, under specific conditions and circumstances³. Vocational development means appropriate management of one's own time, skills and aptitude. Thanks to the activities undertaken during the learning process, young people develop their talents, gain knowledge and skills. What is important, any professional work, even the one which is not associated with the education possessed, gives meaningful experience. An individual learns how to work in a group, how to be flexible and communicate. These are key competences, highly valued by employers.

Vocational development and first steps in the job market are an issue identified with the transition from vocational schooling to working.

Modern forms of education, whose final stage should be professional work, are often treated as ways to "wait out" and prolong the status of a non-working person. Stimulation to vocational development can take place in different ways. Due to the fact that paths of transition from education to work are often complicated and hard to define, a large group of young people who are still in education try to become active and take up an extra or seasonal job, taking advantage of a range of internships and apprenticeships offered. This happens before they take up their first permanent job. On the other hand, studying at university prolongs the period of transition from school to work and has both positive and negative aspects. It helps to better prepare throughout the process of education for the requirements of the job market. The longer path of entering the job market, the higher level of education and quality of life, provided that the education is at a high level. In addition, a longer period of transition to work helps to better adapt the job market policy to vocational learning pathways⁴.

² M. Strykowska, *Zarządzanie karierą zawodową jako forma przedsiębiorczości [Managing a career as a form of entrepreneurship]*, [in:] Z. Ratajczak, *Przedsiębiorczość. Źródła i uwarunkowania psychologiczne [Entrepreneurship. The sources and psychological conditions]*, Difin SA, Warsaw, 2012.

³ M. Adamiec, B. Kozusznik, *Sztuka zarządzania sobą [The art of self-management]*, Polskie Wydawnictwo Ekonomiczne, Warsaw, 2001.

⁴ Z. Ratajczak, A. Bańka, E. Turska, *Współczesna psychologia pracy i organizacji, wybrane zagadnienia [Contemporary work and organizational psychology. The selected issues]*, Wydawnictwo Uniwersytetu Śląskiego, Katowice, 2006.

Creativity and entrepreneurship

Young people often face important choices to make about the field of study and then the career path. The steps taken are to help youths to adjust to their future work. Patterns of behaviour making people familiar with the existing realities are to fulfil this role. Despite the changeability and increasing trends to change a job many times during working life, work is still the most important value in human behaviour, which shapes an individual's identity. Most frequently we define ourselves with a profession we do. The literature has increasingly been describing the phenomenon of "school to work transition". This process is constantly undergoing changes, and education is often regarded as one of the ways to prolong the status of a school student or a university student, i.e. "pending" status, living off one's parents' income. There is a new generation emerging: Generation Y that includes people being inactive professionally, between school and work, in a phase referred to as a transition.

The concept of transition is understood in the countries of Western Europe as the transition from school to work, both as an individual's initiative in the field of vocational education, but also as an initiative in the personal and social sphere in order to gain competences to shape one's identity, define the goals in life, and more. The transition also refers to changes in the job market, i.e. to the evolving definition of the job market. Working conditions have been altered and less and less frequently tasks, duties and the scope responsibilities towards the organisation are traditionally defined. Roles are often assigned to processes performed together as a team rather than to an individual's duties, whereas an employee is required to be available and flexible in the transition between jobs. Employers are increasingly focused on the competences of their employees: knowledge, abilities and attitudes of an individual should match the requirements of tasks and their execution. This creates a challenge for the occupational development of young people.

The behaviour of candidates and employees is increasingly characterised by entrepreneurship and innovativeness, which are a common element of professional development. This is due to a new type of employee that dominates in organisations: it is a knowledgeable worker, a person who uses the knowledge and practices the responsible leadership. The structure of job market in the knowledge economy does not guarantee jobs even to well-educated people who are prepared to take up a role at work. Therefore, the fact of whether young people are hired or not increasingly depends on themselves, their competences, skills and entrepreneurship.

By analysing job offers, it can be noted that employers more often pay attention to soft skills and experience rather than formal professional qualifications. Currently, an employee's resources include entrepreneurship, creativity, leadership, i.e. the factors that help achieve career goals. Besides being a particular set of different forms of capital, entrepreneurship is also a set of personality traits associated with the ability to set and implement the objectives of the selected career path.

Modern psychology is no longer looking for traits of entrepreneurial personality that lead to a successful career. Now research is focused on describing the images of people who develop their careers against the obstacles encountered: crises, changes, losses, etc. Contemporary definitions of success are expressed as the ability to overcome failures and other adverse events. Many theories (e.g. proactive personality theory, self-efficacy theory) emphasise that an individual's personality is of great importance in overcoming life difficulties, and it is the obstacles encountered that prompts the development of entrepreneurial personality, capable of overcoming difficulties and critical events in the future. Being entrepreneurial as a trait of personality resistant to random changes is shaped as a result of hardship experienced because only through overcoming the obstacles the individual is able to build a new value that allows them to discover new opportunities and solutions⁵.

⁵ A. Bańka, *Przedsiębiorczość w okresie adolescencji i wczesnej dorosłości. O formowaniu się tożsamości nowego typu [Entrepreneurship in adolescence and early adulthood. The formation of a new type identity]*, [in:] Z. Ratajczak,

An interesting example of the modern approach to entrepreneurship is the concept of entrepreneurial passion. The creators of this theory (Cardon et al.⁶) found that passion is a significant, but not very precise concept. They associate it with positive emotions, such as pride, dedication and enthusiasm. These and other positive attributes (joy) are the emotional resources to cope with challenges and difficult situations.

The authors of this theory pointed to the three characteristics which describe the entrepreneurial passion:

- it is associated with intense emotions,
- it is associated with entrepreneurial activity,
- it works as an incentive, motivating people to overcome obstacles and stay engaged.

Under this theory, three types of entrepreneurial identities were also determined: inventive, founding and developing. They are about combining the passion with creating, starting a company and developing activities.

The issues of entrepreneurship and career development are understood and implemented by young people in a specific way. Currently, the job market requires completely different behaviour patterns and qualifications than a few years ago. Today, in order to achieve their career goals, youths often complement their skills by taking part in training, workshops and internship programmes. The awareness of this need is becoming more common. It is believed that one should rely primarily on themselves and use one's own skills. A chance to have a job often has to be created by oneself and entrepreneurship matters here. At present, many studies have been carried out on the generation entering the job market and the results have shown that many beliefs about newcomers in the job market have become myths that have nothing to do with the truth. These days, young people are different from their peers several years ago and are identified as Generation Y⁷.

The generation mentioned is often described in Western Europe and the United States. This group of young people are also the target of modern thought-out strategies and advertising campaigns. They have become trendsetters, e.g. in fashion, and recipients of the latest technological innovations. Generation Y is seen as a group that wants to enjoy life, use existing opportunities and chances to realise their own plans. They are well aware of the fact that the modern world gives them unlimited choices⁸.

R. Zydel⁹ is one of the founders of the "World of Youth" research programme, which was implemented for five years among young people aged 16-24 years and it included over five thousand participants. The subject of the study was, among others, the attitude of youth to a career. The results showed that contemporary young people are educated, proactive, take risks and are not interested in working for large corporations. Young respondents often reply that they want to be independent and self-reliant at work. They appreciate both a job that meets their expectations and is in agreement with the interests and the work-life balance. By analysing the results, R. Zydel concluded that today's youth is characterised by two attitudes: consumerism and pragmatism. Their dreams of the future are planned, viably scheduled and flexible. A success at work has a dimension of money that will allow them to lead lives at the appropriate level. Money is one of the most important values that enable them to pursue their passions, develop and place them in the social hierarchy. Zydel also emphasises the role of knowledge and shrewdness, which can also be understood as an element of entrepreneurial behaviour. Professional aspirations of the youths

Przedsiębiorczość. Źródła i uwarunkowania psychologiczne [Entrepreneurship. The sources and psychological conditions], Difin SA, Warsaw, 2012, p. 15.

⁶ M. Strykowska, *Zarządzanie karierą zawodową jako forma przedsiębiorczości [Managing a career as a form of entrepreneurship]*, [in:] Z. Ratajczak, *Przedsiębiorczość. Źródła i uwarunkowania psychologiczne [Entrepreneurship. The sources and psychological conditions]*, Difin SA, Warsaw, 2012, p. 36.

⁷ Ibidem.

⁸ Ibidem.

⁹ J. Van Den Bergh J., M. Behrer, *Jak kreować marki, które pokocha pokolenie Y? [How cool brands stay hot: Branding to Generation Y]*, Edgard, Warsaw, 2012, p. 41.

studied apply to a professional position and skills, as well as – often highlighted – material resources provided by work and necessary for their self-realisation. This is reflected in the efforts of young people to combine work with hobbies, i.e. work connected with their interests, which is socially attractive, especially among their peers. In addition, the attitude to a career is characterised by non-linearity and flexibility. It is assumed that plans will be implemented and opportunities used. The young people are entrepreneurial and creative in the job market, which reflects in the fact that they gain advantage through acquiring different skills, licenses and experiences that will help them to get a job or additional income in the future. The behaviour patterns and actions of young people listed here, manifested also in their flexibility, activity, risk-taking, can be identified as entrepreneurial activity since they contain elements of a process: goals, motivation, time frame, personality properties, external conditions, and interaction¹⁰.

Preparing for the job search

The term “competence” frequently appears in job advertisements in the press, during job interviews or procedures associated with the evaluation of employees. The decision of whether a candidate should be hired often depends directly on how their competences and qualifications will be assessed. Therefore, a task of a person who starts searching for a job is to present their skills in a way that is interesting and attractive to a potential employer. Originally, competences are divided into hard (substantive) and soft (psychological).

It has become more widespread to use the concept of competences in the sense going beyond the purely professional skills. According to EU standards, the CV section on skills and competences should include those acquired during life and work, not necessarily confirmed by official diplomas or references. Furthermore, candidates can list social competences, which they gained in a variety of ways: both at school and work, as well as during social activities or leisure activities.

When preparing application documents and looking for a job, candidates should also create a list of values and needs that are most relevant to them in the context of the selected career path. On average, half the time of the most active period in life is spent at work. Taking this fact into consideration, one should make sure that the time is spent in the way that is corresponding and harmonising with their personality. A suitable job is a combination of skills, interests and values against the background of a unique personality.

According to E. Schein, there is a close relationship between the professed value system and needs and the direction of the chosen career. Following this direction, Schein created “career anchors”, which represent eight values: professionalism, leadership, autonomy and independence, security and stability, creativity and entrepreneurship, service and dedication to others, challenge, lifestyle¹¹.

The literature always emphasises the importance of preparing for the job search. An individual should provide the example plans, scheduled in time, and determine the search stages. It is often stressed that looking for a job should be a full-time occupation for unemployed people. The searching process can be divided into three stages: preparing, gaining momentum and responding to job offers. Time designed for the job search depends on variables that not always can be controlled, such as the economic situation, the individual level of experience and the number of competent candidates for the same post. The preparation involves completing relevant documentation. The momentum means in other words collecting information on interesting offers and employers and how to make contact with them. It also

¹⁰ Ibidem.

¹¹ M. Polczyk, *Jak i gdzie skutecznie szukać pracy?* [How and where to effectively look for a job?], Wolters Kluwer Polska Sp. z o.o., Warsaw, 2007, p. 11.

consists in networking with people who can assist in finding a job. The next stage is about responding to offers and participating in job interviews¹².

The very process of looking for a job can be implemented using a variety of methods. These are some procedures, including particular activities and tasks. Each method has its own specific characteristics and differs from the others, however, it also contains some common elements to the entire job search process. The most significant element relates to two factors: creating the opportunity to collect information on the job market, as well as creating the opportunity for candidates to inform the environment that they are looking for work. The most popular methods mentioned in the literature include, among others, network of contacts, newspaper advertisements, direct contact with employers, Internet, employment agencies and career fairs¹³.

Interviews conducted with the final year students [klasa maturalna in Polish] demonstrated that they often have trouble writing a proper curriculum vitae, CV. Quite often they perceive a CV as a document that only contains relevant information and they see no need to communicate this information in a manner which is attractive to employers. However, the curriculum vitae as a document with the entire career path is a presentation of the most valuable traits. With the course of time and gaining further experience, it also becomes a testimony to the achievements and therefore can be a starting point of one's presentation. A CV may become a sales tool, which also serves to promote a candidate, give credence and represent them. It is a properly prepared CV that leads to the candidate being invited to a job interview¹⁴.

A CV is a basic document, whose aim is to get the right person to read the application documents. The analyses presented in the literature indicate that a manager or an employer decides in a few seconds, whether a CV is potentially interesting. This decision often depends on how the candidate will advertise themselves in their cover letter. It should also be noted that the application documents should have an individual character. Recruiters pay attention to whether the documents are prepared for this specific job and adjusted to the employer. Documents should include a detailed description of the skills required for the position¹⁵.

The tasks that graduates face at the beginning of their vocational development are not easy. Often candidates will be able to prepare professional application documents only on the basis of their own experiences and mistakes. They will also learn how to efficiently and effectively search for job offers, rejecting those that do not meet their expectations. On the other hand, such knowledge and ability will certainly be noticed by a potential employer.

Conclusion

As demonstrated by many studies, the representatives of young generation very often do not have definite career plans. They do not pay particular attention to their current job¹⁶. Such an attitude is observed among secondary school students, university students and even graduates of full-time and part-time studies. Professional work undertaken during secondary school or at the beginning of studies is most commonly the first job of a young person. The choice of work is often dictated only by the need to earn a living or pay for the tuition. In addition, this work does not match the direction of education and is only the source of income. Another problem is the feeling of disappointment resulting from the wrongly chosen studies, which translates into discouragement, frustration and even depression, reduced motivation and engagement in the job search.

¹² J. Taylor, *Jak efektywnie poszukiwać pracy* [*How to effectively look for a job*], Polskie Wydawnictwa Profesjonalne Sp. z o.o., Kraków, 2006, p. 35.

¹³ M. Polczyk, op. cit.

¹⁴ J. Taylor, op. cit.

¹⁵ Ibidem.

¹⁶ M. Adamiec, B. Kozusznik, op. cit., p. 83.

Other factors contributing to the limited number of decisions regarding the job search are unclear criteria of employment, low salary, frequent nepotism.

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Progressing rapidly, at great speed and intensity, social, economic, demographic and technological transformations, which become intense in the face of the crisis time phenomena, have destroyed the hitherto conditions and factors of development. It brings about the necessity and the need to adapt economies and their entities to the new situation. In the process of searching for new paths of development of economies and their entities are formed new opinions and assessments, concepts and theories, as well as the directions and strategies of changes. They constitute the centre of interest and the conceptual framework of this book. The entirety of the Authors' deliberations is divided into four thematic parts, logically and precisely inter-related:

- ▶ Principles of the Economic System and Sustainable Development,
- ▶ Effectiveness, Business Valuation and Financing of Enterprises,
- ▶ Internationalisation and Innovation as a Way of Enterprise Development,
- ▶ Selected Problems in the Practise of the Functioning of Enterprises and Regions.

The publication came into existence on the basis of many years' cooperation of Department of Economics and Organization of Enterprises at Cracow University of Economics with representatives of various Polish and foreign scientific centres and individuals coming from economic practice. Within the framework of this cooperation are organized, among others, conferences, seminars and symposiums, which are a platform for exchanging ideas and views. Results of such cooperation are the following English-language books published by the Foundation of the Cracow University of Economics:

- ▶ Borowiecki R., Jaki A. (eds.) (2008), *Enterprises in the Face of 21st Century Challenges. Development – Management – Entrepreneurship*,
- ▶ Borowiecki R., Jaki A. (eds.) (2009), *Global and Regional Challenges for the 21st Century Economies*,
- ▶ Borowiecki R., Jaki A. (eds.) (2010), *Enterprises Facing New Economic Challenges, Management – Development – Restructuring*,
- ▶ Borowiecki R., Jaki A. (eds.) (2011), *Global and Regional Challenges of the 21st Century Economy. Studies from Economics and Management*,
- ▶ Borowiecki R., Rojek T. (eds.) (2011), *Developmental Challenges of Contemporary Economies. Management – Finance – Restructuring*,
- ▶ Kaczmarek J., Rojek T. (eds.) (2012), *Dilemmas of the Contemporary Economy Facing Global Changes*,
- ▶ Borowiecki R., Jaki A., Rojek T. (eds.) (2013), *Contemporary Economy in the Face of New Challenges. Economic, Social and Legal Aspects*,
- ▶ Jaki A., Rojek T. (eds.) (2014), *Managing Organizations in Changing Environment. Models – Concepts – Mechanisms*,
- ▶ Kaczmarek J., Kolegowicz K. (eds.) (2014), *Developmental Challenges of the Economy and Enterprises after Crisis*,
- ▶ Borowiecki R., Siuta-Tokarska B. (eds.) (2015), *Restructuring as the Imperative of Developmental Changes in Economy*,
- ▶ Jaki A., Rojek T. (eds.) (2015), *Contemporary Conditions and Trends in Enterprise Management. Strategies – Mechanisms – Processes*,
- ▶ Kaczmarek J., Krzemiński P. (eds.) (2015), *Development, Innovation and Business Potential in View of Economic Changes*.