

JMFS

Journal of Management and Financial Sciences

Volume IV



Issue 6 (October 2011)



SZKOŁA GŁÓWNA HANDLOWA W WARSZAWIE
(WARSAW SCHOOL OF ECONOMICS)

Collegium of Management and Finance

**THE SCIENTIFIC COUNCIL
OF JOURNAL OF MANAGEMENT AND FINANCIAL SCIENCES**

Prof. Janusz Ostaszewski – Chairman
Prof. Ryszard Bartkowiak – Vice-Chairman
Prof. Jan Głuchowski
Prof. Małgorzata Iwanicz-Drozdowska
Prof. Jan Komorowski
Prof. Tomasz Michalski
Prof. Wojciech Pacho
Prof. Piotr Płoszajski
Prof. Maria Romanowska

REVIEWERS OF ISSUES 5 AND 6

Prof. Elżbieta Adamowicz, Dr Tomasz Chmielewski
Dr Andrzej Gałązka, Prof. Edward Golachowski
Prof. Małgorzata Iwanicz-Drozdowska
Prof. Andrzej Kaźmierczak, Prof. Kazimierz Kloc
Dr Mikołaj Pindelski, Prof. Piotr Płoszajski
Prof. Zbigniew Polański, Dr Rafał Towalski
Dr Marcin Wojtysiak-Kotlarski

TRANSLATION

(except articles submitted by the Authors in English)
Mirosław Szymański

LANGUAGE SUPERVISION

Kevin Essex

COVER

Ewa Grabowska

TECHNICAL ASSISTANT

Marcin Jakubiak

ISSN 1899-8968



Typesetting and printed by:
Dom Wydawniczy ELIPSA,
ul. Inflancka 15/198, 00-189 Warszawa
tel./fax 22 635 03 01, 22 635 17 85,
e-mail: elipsa@elipsa.pl, www.elipsa.pl

CONTENTS

From the Scientific Council	5
Executive compensation. Challenges after the 2007–2009 Crisis Maria Aluchna	7
Consumer Behaviour on Selected E-Service Markets in Central and Eastern European Countries. Research Results Anna Dąbrowska, Mirosława Janoś-Kresło	20
Financial Independence of Local Self-Government Units in Acquisition of Sources to Finance Their Activity – Challenges for Self-Government Theory and Practice Paweł Felis	41
Hyperarchy as a New Model of Organisation Rafał Mrówka	62
Migration into the Shadow: Unregistered Work in Poland Bogdan Mróz	73
Integration of Sustainability into Modern Portfolio Theory Benjamin Tobias Peylo	85
Summary	110

FROM THE SCIENTIFIC COUNCIL

Ladies and Gentlemen,

We present you with the sixth edition of the 'Journal of Management and Financial Sciences'. The articles concern mainly microeconomic issues. They represent the functioning of business organisations and the financial decisions of their operators. In several of them are references to the economic crisis of 2007 as a causative factor of changes in economic thought.

We hope that these articles will present a contribution to the development of economic thought and contribute to a fuller understanding of the complex economic issues. We wish you pleasant reading.

Janusz Ostaszewski,
Chairman of the Scientific Council and Dean of the Faculty

Ryszard Bartkowiak,
Vice-Chairman of the Scientific Council and Vice-Dean of the Faculty

Maria Aluchna*
Collegium of Management and Finance
Warsaw School of Economics

Executive compensation. Challenges after the 2007–2009 Crisis¹

1. Introduction

The crisis triggered in 2007 by the mortgage credit crunch on the American market was at the beginning attributed to the weakness of the financial system, and in particular to the banking and supervision system. The excessive liberalisation of the banking system, together with the operation of investment banks and rating agencies were regarded to be the reason². Also major mistakes that hindered the quick recovery were found among inadequate macroeconomic reactions and monetary policy³. However, further observations showed that the financial crisis had an enormous impact not only on the condition of economies and companies all over the world but it contributed to the thorough assessment of corporate governance systems as well as regulatory solutions. The analysis of the origin and course of the crisis proved clearly that it was a series of different factors and solutions that caused the greatest breakdown on the financial markets in the last decades⁴. Among the causes of the crisis⁵ there were indications of more fundamental weaknesses of corporate governance: no reliable information provided to the market, conflict of interest of different institutions such as investment funds and rating agencies, no objective assessment of managers, as well as weaknesses indicated before: low effectiveness of the board work, low effectiveness of the

* PhD degree holder in Economics, Department of Management Theory, Warsaw School of Economics, Al. Niepodległości 164, room 1102, 02-554 Warszawa, tel./fax: 0048 22 654 86 20, email: maria.aluchna@sgh.waw.pl

¹ The author expresses her gratitude to an anonymous reviewer for precious remarks about the article.

² J. Taylor, *Zrozumieć kryzys finansowy*, Wydawnictwo Naukowe PWN, Warsaw 2010.

³ V. Smith, *Housing, recessions and sustaining wealth creation*, prezentacja z wykładu w Komisji Nadzoru Finansowego, 2010, http://www.knf.gov.pl/aktualnosci/wyklad_v.smith.html [24.01.2011].

⁴ Cf. W. Cohan, *House of Cards*, Anchor Books, New York 2010.

⁵ G. Kirkpatrick, *The corporate governance lessons from the financial crisis*, OECD, 2009, <http://www.oecd.org/dataoecd/32/1/42229620.pdf> [21.01.2010]; viz. M. Aluchna, *Kryzys gospodarczy 2007–2009: wyzwania dla corporate governance*, in: P. Urbanek (ed.) *Nadzór korporacyjny w warunkach kryzysu gospodarczego*, Wydawnictwo Uniwersytetu Łódzkiego, 2010, pp. 97–110; I. Koładkiewicz, *Historia kołem się toczy – czas reform w sferze nadzoru korporacyjnego ponownie się zaczął*, *Master of Business Administration*, 2010, No. 3 (104), pp. 86–95.

executive compensation, low involvement of shareholders and their weak impact on the operation of companies. It is the executive remuneration that is most criticised with regard to the origin and course of corporate governance crisis⁶, and observations of business practice clearly indicate that the solutions applied so far do not work at all. The analyses show that the current practice of executive compensation does not solve the problem of managers' activity entirely in their own interest, which has already been identified before, and it does not guarantee value creation for shareholders and does not limit agency conflicts. What is more, it may lead to a number of pathologies and result in poorer results or eventually even the collapse of the company⁷.

The present article attempts to present the contemporary problems connected with the effectiveness of executive compensation. Its aim is to show the whole spectrum of challenges that appear when the executive compensation is used in practice. In the article the notion of executive compensation means the pay for the top managers, i.e. managing directors (in the two tier system) and executives (in the one tier system). The study has the following structure: the first part indicates abandoning by the practice of executive compensation its basic assumptions of operation and tasks which they are to accomplish within the system of corporate governance. The second part discusses corporate practice from the perspective of remuneration. The third part analyses corporate practices in the context of the 2007-2009 crisis, while the fourth one discusses the main challenges from the perspective of corporate governance basic tasks and directions of suggested reforms. Conclusions are presented in the summary.

2. Executive compensation as a corporate governance mechanism

Corporate governance are supposed to provide the whole spectrum of solutions and structures to ensure the supervision of managers' activities and motivate them to act in the interest of shareholders. As a result, among corporate governance

⁶ S. Johnson, H. Ryan, Y. Tian, Managerial incentives and corporate fraud: the sources of incentives matter, 2010, www.ssrn.com/abstract=395960 [21.01.2010]; L. Bebchuk, H. Spamann, Regulating bankers' pay, Harvard John M. Olin Center for Law, Economics and Business, Discussion Paper, 2010, No. 641, www.ssrn.com/abstract=1410072 [04.01.2011]; Wynagrodzenia menedżerów banków przyczyniły się do powstania kryzysu, <http://www.europarl.europa.eu/sides/getDoc.do?type=IM-PRE-SS&reference=20100528STO75183&language=PL> [27.04.2011]; J. C. Bogle, Dość. Prawdziwe miary bogactwa, biznesu i życia. PTE, Warsaw 2009.

⁷ G. Kirkpatrick, The corporate..., *op. cit.*; P. Urbanek, Kryzys finansowy a polityka wynagradzania menedżerów, in: Urbanek P. (ed.) Nadzór korporacyjny w warunkach kryzysu gospodarczego, Wydawnictwo Uniwersytetu Łódzkiego, 2010, pp. 83-96.

mechanisms⁸, there are control mechanisms such as boards (supervisory board or board of directors), the presence of majority shareholders, the position and role of a creditor, and broadly understood possibilities to discipline the managers by the market⁹ as well as market mechanisms, including the stock market, hostile takeover market (market for corporate control), debt market (bonds), market for executives and business culture. Incentive mechanisms are the second group of mechanisms, they include executive compensation together with a number of different motivating programmes. Such a division means that executive compensation is perceived as a crucial element of the corporate governance system since the motivational function limits conflicts between managers and shareholders and is to ensure rapprochement of both groups. The basic assumption of executive compensation is the theory of the conflict of interest between managers and shareholders (agent and principal)¹⁰. Managers tend to diversify the company and increase its size through acquisitions, they have a shorter time horizon as to their presence in the company and they are reluctant to share profit paying dividends as they prefer to retain it for development. On the other hand, shareholders indicate a longer time horizon, they want to receive the return on investment in the form of dividends and prefer to diversify their portfolios of shares on their own not expecting the company to do it for them. Agents (managers) tend to achieve poorer results and raise costs in comparison with the situation when their work is done by the owners.

The role of executive compensation within the corporate governance structure consists, on the one hand, in discouraging managers from acting only in their own interest (building empires, diversification), and on the other in motivating to act in order to increase firm value for shareholders (takeovers, investment, restructuring of the company). The major achievement of corporate governance is an effective link between executive pay and company performance¹¹. It means that instead of fixed salary, executive compensation consists of a variable element paid on the basis of the achieved financial and market results. The growth in the variable component of executive pay is connected with the results of empirical research, which indicated that it is not only the amount but first of

⁸ B. Wolf, *The effects of agency problems on the financial behavior, performance and efficiency of German industrial stock corporations*, Peter Lang Europäischer Verlag der Wissenschaften, 1999.

⁹ F. Allen, D. Gale, *Comparing Financial Systems*, The MIT Press, Cambridge, Massachusetts 2000; R. Monks., N. Minow, *Corporate governance*, Blackwell Business, 2004.

¹⁰ M. Jensen, W. Meckling, *Theory of the firm: Managerial behavior, agency costs and ownership structure*, "Journal of Financial Economics", 1976, Vol. 3, No. 4, pp. 305–360; E. Fama, M. Jensen, *Separation of ownership and control*, "Journal of Law and Economics", 1983, Vol. XXVI.

¹¹ M. Mikolajek-Gocejna, *Wynagrodzenie menedżerów – pierwsze wnioski płynące z kryzysu*, *Master of Business Administration*, No. 3 (104), May 2010, pp. 96–104.

all the structure of remuneration that is crucial from the perspective of corporate governance. The variable component includes bonuses, stock options, restrictive shares and long term motivational plans¹². Moreover, the popularity of share options tie strongly the executives' and shareholders' interests and according to the assumption should encourage managers to increase the company value. The practice of American corporations at the turn of the 20th and 21st centuries made executive compensation to a large extent dependent on the variable part. Bonuses and, first of all, options came up to even 75–80% of the total remuneration. At the same time, it is worth mentioning that this behaviour was a response to the current tax regulations. Low taxes are guaranteed to an American corporation by the establishment of low fixed pay, most often at the level of 1 m dollars. The application of stock options does not bear costs from the point of view of the company as options are not subject to deduction, nor are they considered in fuzzy capital.

3. Pre-crisis corporate practice

A growing conviction of the effectiveness of executive compensation to increase shareholder value contributed to the considerable activity of corporations in this area and at the same time attracted the attention of researchers to the problem of corporate governance. Intensive empirical research carried out in the last 30 years enables the description of managerial compensation which include four trends mentioned below¹³.

3.1. Trend 1 – Considerable growth in managerial compensation after 1990

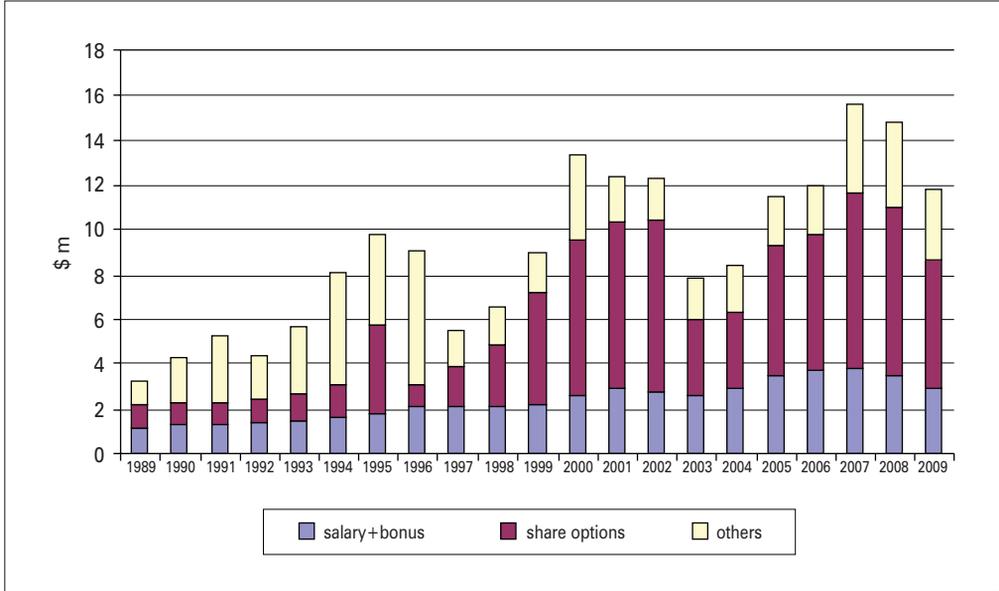
The growth in the interest of executive pay coincides with the growth trend of its total amount after 1990. While the average CEO pay before 1990 oscillated around 3 m dollars, after 1990 it rose considerably. The highest level of executive

¹² The specialists claim that one should add up also fringe benefits like health and pension insurance, telephone, company car, additional other benefits (e.g. sports club membership of the so called expenses). Furthermore, one should be aware that companies often pay additional costs in the case of hiring a manager moving from another company. The development of the issue of executive compensation contributed to all sorts of severance packages and compensation paid to top managers in the case of dismissal or breaking off the contact before its expiry.

¹³ M. Henderson, Paying goes in bankruptcy: executive compensation when agency costs are low, Northwestern University School of Law Printed in U.S.A. Northwestern University Law Review, 2008, Vol. 101, No. 4, <http://ssrn.com/abstract=927081>; G. Clementi, T. Coley, Executive compensation: facts, NBER, 2009, <http://www.nber.org/papers/w15426.pdf>; M. Jensen, K. Murphy, Performance pay and top management incentives, "Journal of Political Economy" 1990, 98:2, pp. 225–63, <http://ssrn.com/abstract=94009>

pay was recorded in 2007 and amounted to 16 million. It means a rise of more than 500% in the course of 20 years. The phenomenon is shown in Fig. 1.

Figure 1. Average CEO pay in the period of 1989–2009



Source: on the basis of Forbes Executive Compensation reports (2009).

The rise in executive pay arouses considerable controversy. There are packages exceeding 100 million dollars. The negative public perception of executive pay is also based on bank practices in 2007 when:

- James Cayne, Bear Stearns CEO received a total remuneration of \$38 m (and the bank nearly went bankrupt and was taken over by JP Morgan),
- Richard Fuld, Lehman Brothers CEO received a total remuneration of \$34 m (\$450m for 10 years), and the bank made a loss of \$10 m and a drop in share rate of 95%,
- 11 largest banks paid totally \$234 m to their CEOs,
- Daniel Mudd, former Fannie May CEO received \$11.6 m; and Richard Syron, former Freddie Mac CEO received \$18.3 m.

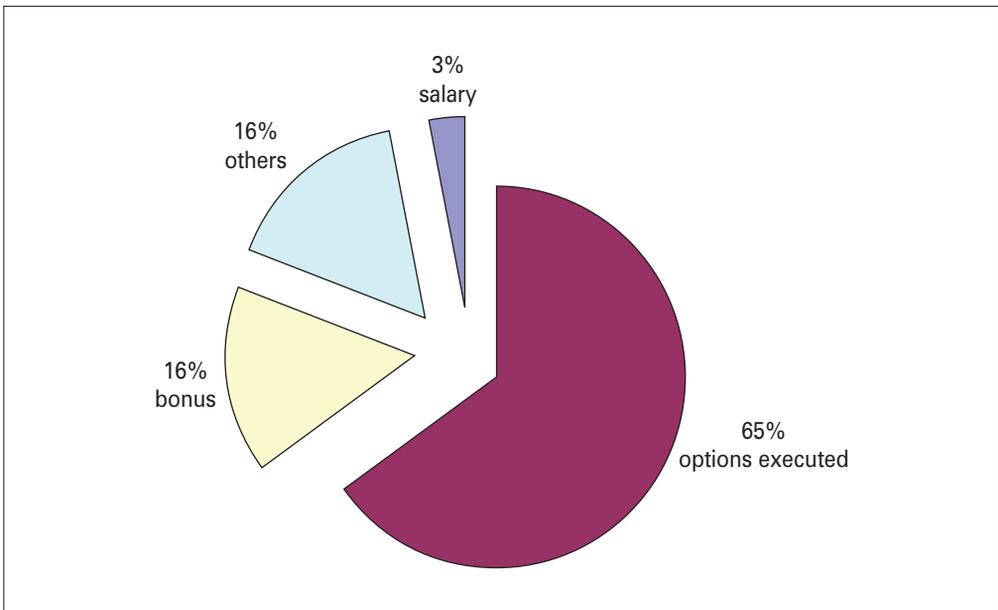
A similar trend, though of lower intensity was noted in Europe. The wave of corporate governance reforms together with the pressure on increased transparency and executive pay with performance pushed up the executive pay rates by about 75% in 2002-2007. The average executive pay in Europe rose in

this period from about 1.5 to over 2.7 million euros, with the highest rise in variable component: from about 700,000 to 1.5 million euros annually.

3.2. Trend 2 – The considerable rise in variable component of executive pay

Fig. 1 shows that the rise in the share of the variable component in executive compensation is the main factor that contributed to the considerable rise in the pay of managerial staff. The basic assumption was to increase the share of the variable component, which is connected with the company performance and serves as a incentive mechanism. Performance related pay is aimed at making interests of managers those of shareholders and as a consequence motivate managers better to take actions in order to increase firm value. Within the variable part the most important role is played by stock options, but also restrictive shares, bonuses and long term motivational programmes are significant. The variable part as a rule amounts to about 60–70% of the whole remuneration, though there are cases in which the share is much lower. A classic example of a large of share of variable part in pay is Richard Fuld’s, Lehman Brothers CEO in 2007 presented in Fig. 2.

Figure 2. The pay structure of Richard Fuld, Lehman Brothers CEO in 2007



Source: on the basis of “Richard Fuld – two words meaning total failure” http://www.graefcrystal.com/images/CRYS_REP_FULD_9_22_08.pdf and articles, Neumann International AG (2010).

Despite suggestions that such a structure of executive pay was aimed at mitigation of conflicts with shareholders and better motivation to work, there were tremendous doubts caused by the short-sightedness of the package unable to guarantee building the company value in the long run.

3.3. Trend 3 – The growing gap between executive pay and workers’ pay

Another crucial trend which does not affect positively the public perception of executive pay is a growing gap between executive and worker pays. While this gap accounted for 25 times in the 60s, 35 times at the beginning of the 80s, towards the end of the 90s the rift between executive pay and workers’ pay achieved the level of 100 times. The further rise caused that in 2004 executive pay was 280 times higher than workers’ pay, and after 2004 it reached up to 520 times. Due to the detachment of executive pay from the level of workers’ pay, there is some criticism to be heard based on strong doubt whether one person (CEO) that receives such skyrocketing remuneration is able to considerably affect the company performance.

3.4. Trend 4 – Short-sightedness of executive pay and encouragement to take risk

Another trend in recent years concerns executive pays based on short term measures and constructed in the way to encourage risk taking¹⁴. Bonuses were tied to short term performance or share price increase. The bonus depended on a corporate performance and was paid for yearly or two-yearly achievements. On the other hand, long term results, trends and sustainable development were not taken into account. Such structure favours risk taking and encourages managers to become involved in projects that guarantee sales growth in the course of one or two years. A classic examples were the packages paid by the American banks, which were more based on sales growth (e.g. mortgage loans or securities) not referring to risk management. The structure of pays does not consider criteria like stable growth, environmental protection and customers or employees satisfaction.

The description of executive compensation presented above arouses numerous controversies and doubts. Although the assumption to tie the interests of managers with those of shareholders cannot be considered erroneous, the size of remuneration appears to be highly debatable. Remuneration packages including stock options of up to 200 million dollars arouse, admittedly, a lot of controversies. It is difficult to estimate the impact of one person (CEO) on the results of the company. Researchers indicate a considerable growing gap between

¹⁴ M. Mikolajek-Gocejna, *Wynagrodzenie...*, *op. cit.*; G. Kirkpatrick, *The corporate...*, *op. cit.*

worker and executive pays and the opposite direction of response in the case of crisis and fall in productivity (in both these cases executive compensation grows). Furthermore, additional doubts refer to the packages themselves and the payment of bonuses guaranteed in the contract irrespective of the company's results. It is best exemplified by high rewards for top managers in collapsing American financial companies. It is difficult to find motivational functions in high bonuses paid to Lehman Brothers or Merrill Lynch managers leaving their jobs. Additional aspects of executive compensation are seen in the case of American companies which were on the brink of collapse and on the saving of which the American government decided to spend billions of dollars.

4. Executive pay and the 2007–2009 crisis

Executive pay is often accompanied by controversies¹⁵ and indignation of some people, it is worth underlining that the present discussion on the applied solutions and their effectiveness is more fundamental. The doubts concerning the effectiveness of executive pay can be divided into three basic groups: structural, methodological and institutional issues. All these problems increased the risk taken by the companies and shareholders' moderated supervision of managers and as a result contributed indirectly to the financial crisis.

4.1. Structural issues

The latest research suggests that the initially expected effects from the performance related pay does not translate into the results of companies. It worth indicating that some researchers had criticised the systems of executive compensation, pointing to considerable limitations in their motivational function and overestimation of effects of performance related executive pay¹⁶. The very construction of executive pay is a problem due to the lack of information and non-linearity of the whole process. There is a question about such a level of remuneration that is still motivating for executives; since some companies have packages of a value of 100 million dollars annually (including stock options), how significant can a 10 million bonus be. There is a lot of misunderstanding about the term of *guaranteed bonus*, meaning that the bonus is paid irrespective of the corporate performance. It is absolutely contradictory to the idea of making executive compensation dependent on actually achieved results. Annual bonus

¹⁵ S. Johnson, H. Ryan, Y. Tian, Managerial incentives..., *op. cit.*

¹⁶ L. Bebchuk, J. Fred, Pay without performance: unfulfilled promise of executive compensation, Harvard University Press, 2004.

dependent on the revenue of profit is also a quite short-sighted motivational instrument. On the other hand, stock options, which were very common in the second half of the 20th century, did not serve their purpose well and often contributed to share price manipulation in the period of execution by managers. Furthermore, the amount of executive pay is very controversial, criticised even by well-known economists (Simon Johnson) due to the detachment from the real economy. Many authors points to the necessity for the change in principles of executive compensation with more consideration to the long term goals of the company. According to some opinions the structures applied so far have encouraged managers to bear the risk in company operation¹⁷. More and more observations indicate that there must be more caution in selecting company effectiveness assessment factors, with which executive pay will be connected.

The latest research is even more critical pointing to many negative effects of the current managerial compensation systems, which, referring pay to particular indicators motivate executives to focus only on these factors. It means a considerable weakening of intrinsic motivation in favour of increasingly stronger domination of extrinsic motivation. In consequence, managers pay less attention to managing the company and market challenges, and their main effort is to maximise their own pay¹⁸. It should not be understood that managers are to be blamed. A similar change in behaviour has been noticed in other professional groups (physicians, lawyers, academicians) due to the application of the system performance related remuneration. The decline in the importance of intrinsic motivation and its negative effects (drop in satisfaction with the job, excessive reliance of activity on external stimuli, transfer of extrinsic motivation to other areas: spillover effect, focus on stimulus related activities: multitasking effect). These effects are compliant with the psychological theories of motivation. The research results undermine the fundamental system of executive motivation, which was regarded as a main instrument of mitigation of different objectives and it became the basic artefact of corporate governance.

4.2. Methodological issues

The second issue is related to methodological aspects which appear in the analyses of executive compensation and influence the construction of pay policy. While it is easy to estimate the amount of a salary or bonus, it is much more difficult to calculate the value of unexercised stock options or long term incentive programmes, not to mention the fact that some fringe benefits are not considered

¹⁷ G. Kirkpatrick. *The corporate...*, *op. cit.*

¹⁸ K. Rost, M. Osterloh, Management fashion pay-for-performance for CEOs, "Schmalenbach Business Review", Vol. 61, 2009, pp. 119–149.

at all. Nobody calculates within the remuneration package the company car or telephone, health insurance or expenses. Another issue making the research of managerial compensation effectiveness difficult is also the problem of deferred payments. Bonuses are paid for past results, quite similar to the long term motivational programmes.

4.3. Institutional issues

Many American experts dealing with executive compensation being very critical of the current practices¹⁹ refer also to the operation of remuneration committees. As a matter of assumption, all or the majority of these committees should consist of independent members to guarantee the objective assessment of executives work and construct their pays accordingly. However, the remuneration committees seem not to accomplish their tasks according to the initial expectations. First of all, committee members are short of data and information that would enable them to reliably evaluate executives work. They are inclined to considerable concessions and treat top managers fairly gently. The explanation of these practices may come from the research of personal relations between boards of directors in the USA and psychological research of group operations. The former revealed for instance the existence of a few companies in which there were pairs of board members with one person sitting on the remuneration committee while the other is in the position of the president and on the contrary. Such observations dispel the myth about the independence of the members of remuneration committees. On the other hand, research in the field of psychology indicate that a bigger similarity between board members and managers with regard to education, style of living, race or age favours lenient appraisal and higher pay.

5. Future challenges

The observations quoted above present quite a pessimistic view of the practice of companies in the area of executive pay. Many observers²⁰ do not share this opinion suggesting that the quoted examples are not harmful or constitute marginal cases with no impact on the majority of corporations. These researchers claim that the effect of the crisis on the amount of executive pays was considerable and strongly perceptible. For instance, the number of companies considering the need for

¹⁹ Viz. L. Bebchuk, J. Fred, Pay without..., *op. cit.*

²⁰ Viz. conversation between Emily Thornton of BusinessWeek and Don Delves, founder and president of Delves Group, consulting company specialising in managerial compensation and Ken Bosch, director of North American, Managerial compensation Department in Hewitt Associates ("Executive Pay Trends", 13.10.2009).

the return of part of executive pay in the case of the lack of implementation of assumed goals grew up to 64% in 2009 from 18% in 2006. Besides, what strikes is, in the majority of cases, the elimination of the “guaranteed bonus”. Bonus as a component itself was subject to change as well: there was a decline in the amount of bonuses paid, in particular long term bonuses declined 15–25%, which is interpreted as the most important change in the last 25 years. Optimistic conclusions come also from the policy of severance packages construction – instead of three annual salaries, at present severance packages amount to two annual salaries. It should be expected that the trend of executive pay for performance policy in the long term will intensify and become a common practice.

In response to identified corporate governance weaknesses and irregularities in the construction of executive pay, the researchers and regulators formulate the directions of further action pointing to the most relevant challenges in the future. Big changes are expected in this area as a result of the implementation of new regulations, the Dodd-Frank Act of 2010, which considerably reforms the area of executive compensation. It is worth mentioning, however, that the analysis of American companies and banks within the government programme TARP (Troubled Assets Relief Program) as well as their activity towards the proposed new regulations showed the strength of lobbying and the scale of impact of corporations on law making in the USA. Within the implemented reforms, the increase in the role of remuneration committees should be mentioned. Although many analyses indicated frequent conflicts of interest between members or close relations, new regulations emphasise the increased transparency and objectivity of committees. The recipe for the improvement may also be found in more involvement on the part of shareholders. The involvement is reflected in say *on pay* initiatives assuming the opportunity for shareholders to participate in the process of construction of executive pay. It means that shareholders during general shareholders meetings vote on a definite package of managerial compensation or decide about its specific elements. This practice is becoming quite popular in both European and American companies and its beginning in the USA is connected with shareholders’ willingness to affect remuneration in the companies included in the government air programme TARP and reform within the Financial Reform Bill. Although it is possible to come across some words of criticism mainly from managers, the participation of shareholders in the construction of the remuneration policy may contribute to the improvement of standards in this area and mitigate problems identified with the ineffective work of committees for remuneration. It is indicated that the very preparation of voting forces the board (supervisory board of the board of directors) to present a complex report on the policy of company executive compensation together with the discussion

of specific criteria of the appraisal of managers' work and components of work. The existence of such a report not only increases the transparency but also encourages individual and institutional shareholders to show more interest and initiative in this area.

Bibliography

1. Allen F., Gale D., *Comparing Financial Systems*, the MIT Press, Cambridge, Massachusetts 2000.
2. Aluchna M., Kryzys gospodarczy 2007–2009: wyzwania dla corporate governance [Economic crisis 2007–2009: challenge for corporate governance], in: w P. Urbanek (ed.), *Nadzór korporacyjny w warunkach kryzysu gospodarczego* [Corporate supervision in the economic crisis conditions], Wydawnictwo Uniwersytetu Łódzkiego, 2010, pp. 97–110.
3. Bebchuk L., Fred J., *Pay without performance: unfulfilled promise of executive compensation*, Harvard University Press, 2004.
4. Bebchuk L., Spamann H., *Regulating bankers' pay*, Harvard John M. Olin Center for Law, Economics and Business, Discussion Paper, 2010, No. 641, www.ssrn.com/abstract=1410072 [04.01.2011].
5. Bogle J. C., *Dość. Prawdziwe miary bogactwa, biznesu i życia* [Enough, True Measures of Money, Business and Life], PTE, Warsaw 2009.
6. Clementi G., Coley T., *Executive compensation: facts*. NBER, 2009, <http://www.nber.org/papers/w15426.pdf>
7. Cohan W., *House of Cards*, Anchor Books, New York 2010.
8. *Executive Pay Trends*, conversation between Emily Thornton of BusinessWeek and Don Delves, founder and president of Delves Group, consulting company specialising in managerial compensation and Ken Bosch, director of North American, Managerial Compensation Department in Hewitt Associates, 13.10.2009.
9. Fama E., Jensen M., Separation of ownership and control, "Journal of Law and Economics", 1983, Vol. XXVI.
10. Henderson M., *Paying goes in bankruptcy: executive compensation when agency costs are low*. Northwestern University School of Law Printed in U.S.A. Northwestern University Law Review, 2008, Vol. 101, No. 4, <http://ssrn.com/abstract=927081>
11. Jensen M., Meckling W., *Theory of the firm: Managerial behavior, agency costs and ownership structure*, "Journal of Financial Economics", 1976, Vol. 3, No. 4, pp. 305–360.
12. Jensen M., Murphy K., *Performance pay and top management incentives*, "Journal of Political Economy", 1990, 98:2, pp. 225–63, <http://ssrn.com/abstract=94009>

13. Johnson S., Ryan H., Tian Y., Managerial incentives and corporate fraud: the sources of incentives matter, 2010, www.ssrn.com/abstract=395960 [21.01.2010].
14. Kirkpatrick G., The corporate governance lessons from the financial crisis, OCED, 2009, <http://www.oecd.org/dataoecd/32/1/42229620.pdf> [21.01.2010].
15. Kołodkiewicz I., Historia kołem się toczy – czas reform w sferze nadzoru korporacyjnego ponownie się zaczął [Turning tides of history – the reform time in the area of corporate supervision came again], *Master of Business Administration*, 2010, No. 3 (104), pp. 86–95.
16. Mikołajek-Gocejna M., Wynagrodzenie menedżerów – pierwsze wnioski płynące z kryzysu [Managerial compensation – first conclusions to be drawn from the crisis], *Master of Business Administration*, No. 3 (104), May 2010, pp. 96–104.
17. Monks R., Minow N., *Corporate governance*, Blackwell Business, 2004.
18. Rost K., Osterloh M., Management fashion pay-for-performance for CEOs, “Schmalenbach Business Review”, 2009, Vol. 61, 2009, pp. 119–149.
19. Smith V., Housing, recessions and sustaining wealth creation, prezentacja z wykładu w Komisji Nadzoru Finansowego, 2010, http://www.knf.gov.pl/aktualnosci/wyklad_v.smith.html [24.01.2011].
20. Taylor J., *Zrozumieć kryzys finansowy* [How to understand the financial crisis], Wydawnictwo Naukowe PWN, Warsaw 2010.
21. Urbanek P., Kryzys finansowy a polityka wynagradzania menedżerów, Financial crisis and the managerial policy compensation], in: Urbanek P. (ed.), *Nadzór korporacyjny w warunkach kryzysu gospodarczego* [Corporate supervision in the economic crisis conditions], Wydawnictwo Uniwersytetu Łódzkiego, 2010, pp. 83–96.
22. Wolf B., *The effects of agency problems on the financial behavior, performance and efficiency of German industrial stock corporations*, Peter Lang Europäischer Verlag der Wissenschaften. 1999.
23. Wynagrodzenia menedżerów banków przyczyniły się do powstania kryzysu [Bank managers’ compensation contributed to the outbreak of crisis], <http://www.europarl.europa.eu/sides/getDoc.do?type=IM-PRESS&reference=20100528STO75183&language=PL> [27.04.2011].

Anna Dąbrowska
Mirośława Janoś-Kreso
Collegium of Management and Finance
Warsaw School of Economics

Consumer Behaviour on Selected E-Service Markets in Central and Eastern European Countries. Research Results

1. Introduction

Referring to the transformations we have had to deal with in the past years, we mean modern information communication technologies. They are thought to be the most important factors of civilisation development, and their dynamic growth and diffusion stimulate the growth in contemporary economies and societies. People all over the world hope that new technologies will contribute to a healthier life, larger social freedom, knowledge growth and higher productivity of their earnings. It is essential to become a part of the network that combines the results of technological revolution and globalisation, integrates markets and connects people beyond traditional borders. At present information communication technologies let people communicate in the way they have never been able to communicate before as well as participate in decisions affecting their lives¹. “Photography is nice, but film moves. Film is nice, but television is live. Television is nice, but the Web is interactive”².

The Internet introduced a new quality to the lives of people in the world giving them opportunities unknown so far. The Internet, irrespective of the distance, state borders, social and cultural differences, is subject to continuous changes in terms of the very idea of it and also the scope of its applications. Virtualisation, as a new feature or better to say the way to generate and process reality, seems to be a major effect of human space transformations.

The developing Internet civilisation and also better standard of living, development of new goods and services affect consumer behaviour and purchasing decisions made by them in relation to the ways and means to satisfy needs. Consumer behaviour is increasingly treated as a continuous process not limited to

¹ Human Development Reports 2001: Making new technologies work for human development, Published for the United Nations Development Programme (UNDP), Oxford University Press, New York, Oxford 2001, p. 1.

² A. Uzelac, eCulture: Cultural Goods Between Public Domain and Private Proper, http://www.imo.hr/~sandra/docs/uzelac_eculture-proceedings.pdf, p. 32.

the moment of purchasing a product or service but including the issues affecting consumer reactions before, in the course of and after the purchase. They refer to the behaviour of end users: people and households purchasing goods and services for personal consumption³; those who choose, buy and use products, services, ideas and experience in order to satisfy their needs and desires⁴.

Consumer behaviour is a complex process consisting of a lot of reactions resulting from the variables coming from both the external environment and internal human features. These reactions may be considered in relation to the problems connected with the specific qualities of human needs, their kinds and order of appearance. They may also refer to the volume and structure of consumption which determines the choice of certain sets of goods and services to satisfy these needs as well as the way the process of consumption is organised, including the decisions on the acquisition of funds for consumption and decisions on purchasing⁵.

Consumers irrespective of the country and its level of social and economic development differ from one another by age, education or income situation. The choices made by them are affected by both external and internal factors which eventually have an impact on their behaviour.

The research project *Consumer on E-Service Market in Central and Eastern European Countries*⁶ makes an attempt to recognise consumer behaviour on this market in selected Central and Eastern European countries, i.e. Estonia, Lithuania, Latvia Poland and the Ukraine. The article presents the perception of e-services in a country under investigation at the background of Europe as well as the use of the following public e-services: e-administration, e-health, e-education and leisure oriented services: e-commerce, e-tourism and e-culture.

2. E-services as a new form of services

The dynamic development of modern forms of communication exerts an essential impact on changes in business processes and the perception of services. Until recently nobody expected that services could be rendered from a distance.

³ Ph. Kotler, G. Armstrong, *Principles of Marketing*, Pearson Education, Inc., Upper Saddle River, New Jersey 2010, p. 159.

⁴ M. R. Solomon, *Zachowanie i zwyczaje konsumentów*, Wydawnictwo HELION, Gliwice 2006, Ed. VI, p. 26, 620.

⁵ G. Światowy, *Zachowania konsumentów*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2006, p. 12.

⁶ Konsument na rynku e-usług w krajach Europy Środkowo-Wschodniej, research project No. N N112 259334 financed by the Ministry of Science and Higher Education, carried out in the period of 2008–2010 in the Institute of Market Research, Consumption and Economic Situation. CAWI based research in every country included 600 consumers/internauts, who in 2008 used at least 3 of 8 examined services.

E-services are a new pattern of services with the Internet application. They may refer to full or partial e-customer services in one kind of services, with its specific character considered⁷. The development of e-services is supported by the European Union as an indication of the construction of the information society, the aspiration to the best possible satisfaction of social needs and higher standard of living.

E-services may be defined as a new pattern of services, and what follows satisfaction of needs through the Internet from the moment of the first contact with the customer (individual or institutional) in order to make an offer through ordering the service, rendering it and contact afterwards. The virtual form of services makes services more standardised and may refer to the full of fragmentary e-customer service (for instance service order, making appointments, reservation of tickets or books in the library) within the service process characteristic of this type of service⁸.

The development of e-services requires Internet access, including broadband Internet and mobile telephony. The number of business entities and households having access to the Internet is growing all the time. The opportunities to render on-line services are growing dynamically too. It is increasingly noticeable that the improvement of the process of rendering services is possible due to the popularisation of modern technologies and bridging the gap to the countries enjoying a high level of social and economic growth.

The changing market of e-services changes also the demand of consumers who need a more and more interesting offer adjusted to their needs in different areas of their life. The modern e-service consumer is a buyer who is not satisfied with the standard offer made by the provider but actively affects the shape and service creation as well as the way they are offered.

The development of e-services depends on different factors in terms of both supply and demand. On the one hand, it depends on the development of telecommunication infrastructure (network infrastructure, software, digital platforms, funds to develop them), on the other hand, on the demand for these services, which is connected with household economic conditions, equipment like a laptop with Internet access as well as the acquired skills in the area of new technologies.

The development of e-services is an inherent part of the 20th century organisation model, which is based on the development of IT⁹. The growth rate of e-

⁷ A. Dąbrowska, *Rozwój rynku usług w Polsce – uwarunkowania i perspektywy*, Oficyna Wydawnicza SGH, Warszawa 2008.

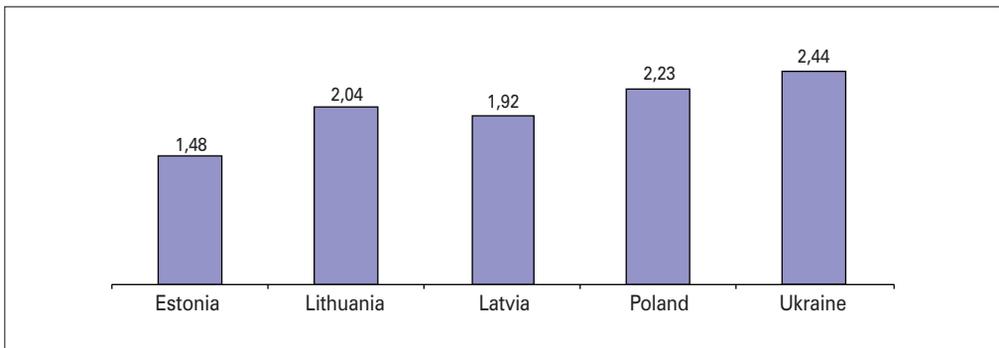
⁸ Cf. A. Dąbrowska, *Rozwój rynku usług w Polsce – uwarunkowania i perspektywy*, Szkoła Główna Handlowa w Warszawie, Warszawa 2008, p. 44.

⁹ W. Springer, *Wpływ wirtualizacji przedsiębiorstw na modele e-biznesu. Ujęcie instytucjonalne*, Szkoła Główna Handlowa w Warszawie, Warsaw 2008, p. 26.

services depends on the access to and quality of the IT infrastructure, the competence of people providing and using modern communication information technologies.

The results of research carried out within project *Consumer on E-Service Market in Central and Eastern European Countries*¹⁰ indicate a relatively low level of free Internet access of households in the examined countries: Lithuania, Latvia, Estonia, Poland and the Ukraine. The dissatisfaction with free Internet access is reflected in the assessment of the access: the Polish respondents gave it the worst mark (an average of 3.26) the Estonian the best (1.99)¹¹. Also the assessment of e-service development in relation to Europe was pessimistic. The development of e-services was best assessed in Estonia, which may be accounted for by the fact that this country belongs to the leading EU countries on account of the Internet access. The respondents/internauts were most critical in Poland (average 2.23) and the Ukraine (2.44), shown in Fig. 1.

Figure 1. Assessment of e-service development at the background of Europe in selected Central and Eastern European countries. The question asked was: *Do you agree with the statement: The development of service through The Internet is the worst in Europe?* The scale from 1–4, where 1 means *I definitely disagree* and 4 – *I definitely agree*



Source: own material based of the research report *Consumer on the market of e-services in Central and Eastern Europe*.

It should be stated that the higher percentage of society make use of the Internet, the higher the IT awareness. A better educated society means a more

¹⁰ *Consumer on the market of e-services in Central and Eastern Europe*, research project No. N N112 259334 financed by the Ministry of Science and Higher Education, carried out in the period of 2008–2010 in the Institute of Market Research, Consumption and Economic Situation.

¹¹ The question asked was: *Do you agree with the statement: The development of service through Internet is worst in Europe?* The scale from 1–4, where 1 means *I definitely disagree* and 4 – *I definitely agree*.

competitive economy, in which knowledge determines the common future and economic growth¹².

The factors conditioning changes in consumer behaviour in relation to e-services use include:

- the possibility of making the offer to more e-consumers who can be reached by means of traditional methods in a more difficult and also expensive way. It is not unimportant that e-consumers may be stimulated in different e-service areas,
- quick modification of offers and adjustment to changing trends, prices and exchange rates, which is important especially in the period of turbulence, e.g. financial crisis,
- providing consumers with exhaustive information on services with the possibility of using sound, movement and text, which contributes to the materialisation of services and facilitates decision making,
- the possibility of eliminating indirect links from some services, which brings the service closer to the customer and may lower the service cost, and consequently the price,
- the possibility of extending the working time of a service company up to 24 hours a day without any additional costs incurred, which is not insignificant in view of price pressure, and for consumers it makes the company more easily accessible, open to customers' needs and expectations,
- the consumer looking for a service on the web is anonymous, which may facilitate making independent purchasing decision, but may give rise to the threat of using services by children without the knowledge and supervision of parents,
- short time needed to place an order and conclude the sale-purchase transaction and in some cases the consumption, which accelerates the time of need satisfaction,
- variety of payment forms (transfer into account, COD, payment cards), though factors like time and security play an important role too,
- access to local and international markets, essential in the era of service globalisation.

The results (in every country the research included more than 600 consumers/internauts, who in 2008 made use of at least 3 of 8 kinds of services:

¹² A. Kraus, Informacyjne usługi cyfrowe we współczesnym społeczeństwie i gospodarce, in: Społeczeństwo informacyjne. Wybrane aspekty gospodarki elektronicznej, pod redakcją C. Malesa, M. Saramy, Uniwersytet Rzeszowski, Wydawnictwo Max – Druk Drukarnia Medyczna, Rzeszów 2009, p. 329.

e-administration, e-education, e-health, e-commerce, e-culture, e-tourism, e-banking and e-education) can determine disparities in the level of e-service use in the examined countries against the background of European Union countries.

The Internet, like other media affects, the purchasing decisions of traditional consumers who look for information on the Internet but do shopping in the real world and e-consumers, who may use the Internet in all stages of the decision making process.

It must be said that individual kinds of e-services are very specific and play different roles in the lives of contemporary consumers, which is reflected in hierarchy of importance of e-services as determined by the respondents.

The research carried out by the author indicates that consumers regard e-banking to be the most important among all examined e-services¹³, to be followed by e-commerce, Table 1.

Table 1. E-services regarded as most important in selected Central and Eastern European countries

Country	E-							
	Administration	Banking	Education	Commerce	Culture	Tourism	Insurance	Health
Estonia	19.8	91.5	35.8	39.6	28.3	20.8	17.0	21.7
Lithuania	33.0	83.0	36.8	27.4	49.1	15.1	13.2	28.3
Latvia	.	89.6	34.0	46.2	50.9	24.5	6.6	29.2
Poland	5.8	81.0	42.1	67.8	25.6	28.1	5.8	33.1
Ukraine	15.2	53.3	57.1	53.3	40.0	18.1	1.9	50.5

Source: own research based material.

The above data indicate that e-banking, in all the countries took the first position. However, in Estonia 90% of internauts pointed to it and in the Ukraine only every second respondent. The remaining e-services in different countries were assessed differently. E-administration was regarded as the most important among e-services by every third respondent in Lithuania, and only by 6% of respondents in Poland. E-education is the most important according to 57% internauts in the Ukraine, in the remaining countries the indications went down below 15–21 percentage points. E-commerce was best assessed in Poland and more than twice as low in Lithuania. E-culture achieved the lowest score in Poland, and the highest in Lithuania and Latvia. E-tourism in no country exceeded 29%, the lowest percentage of indications is attributed to Latvia and Lithuania. E-insurance was rated the highest in Estonia (17.0%), and the lowest in the Ukraine (1.9%). A relatively high percentage was attributed to health. Health is

¹³ E-banking and e-insurance are the topics considered in the present article.

the highest human value, and the Internet is a chance to acquire information not only about medical centres but also about prevention, the latest achievements in the area of medicine, it also enables the ordering of medicines etc.

3. E-public services: e-administration, e-education, e-health

Public services include: administration services, social services, including health and education and technical services.

The recommendations for building up electronic systems of public information in the EU member countries were first defined in *e-Europe* strategy referring to four major areas of e-services: e-education, e-commerce, e-health and e-administration¹⁴. Observing modern consumers and their environment it is impossible not to notice the growing need for information opportunities not only in commerce and banking services well known generally but also services like administration.

3.1. E-administration

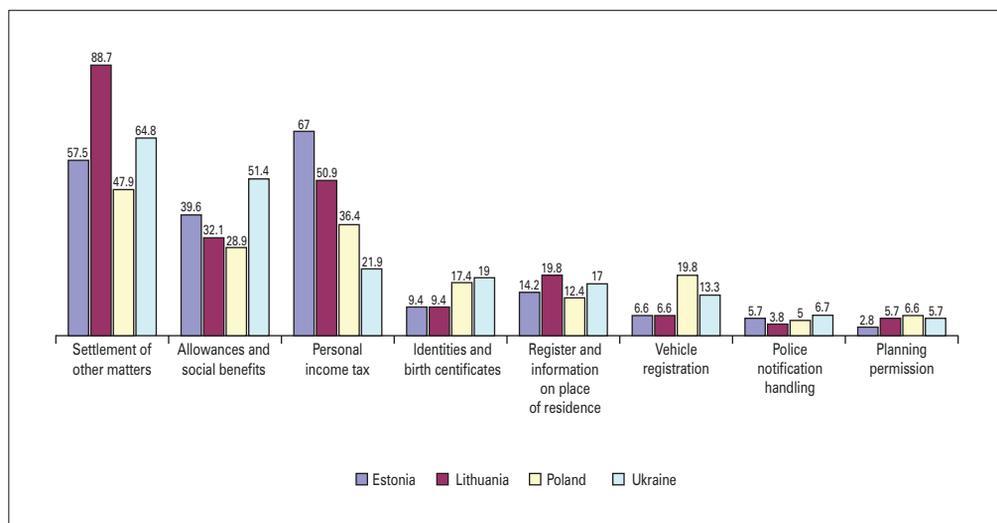
Informatisation of public administration and citizen's access to central and self-government administration determines democracy and a larger share for citizens in the social and economic life¹⁵.

The above mentioned research indicates that the biggest percentages of internauts made use of e-administration in 2008 to settle formalities connected with paying taxes by physical persons, especially in Estonia (67% of indications) and in Lithuania (close to 51% of indications), and to a small extent in the Ukraine (22% of indications). In the Ukraine the majority of people settle online, the majority of things connected with allowances, social benefits (more than 50%). In the case of formalities like identity cards or birth certificates the highest indication was noted in the Ukraine and Poland. The questions connected with registration and information about the change of the place of residence through the Internet were most often dealt with by internauts from Lithuania and the Ukraine, car registration in Poland. To a small extent the Internet was used to get in touch with the police (notifications) or applications for planning permissions, Fig. 2.

¹⁴ More: M. Luterek, e-government. Systemy informacji publicznej, Wydawnictwa Akademickie i Profesjonalne, Warszawa 2010; A. Dąbrowska, M. Janoś-Kresło, A. Wódkowski, E-usługi a społeczeństwo informacyjne, Difin, Warsaw 2009.

¹⁵ D. Adamski et al., e-Administracja, prawne zagadnienia informatyzacji, ed. D. Szostak, Pressom Sp. z o.o., Wrocław 2009, p. 13.

Figure 2. E-administration use in selected countries of Central and Eastern Europe in 2008 (in percentages)



Source: own material based of the research report Consumer on the market of e-services in Central and Eastern Europe.

3.2. E-health

The changes observed in the attitude to the problem of health and the role of health in modern societies indicate that we live in the health society. It is reflected in two significant social processes: expansion of the area of health problems and the focus on health as a priority¹⁶.

E-health refers in a broader perspective not only to the development of technology but also to a certain way of thinking as well as the commitment to improve the local and global health care through the application of modern communication technologies¹⁷. The definition proposed by the European Commission defines e-health as an application of new information technologies to satisfy the needs of citizens, patients, health protection experts, health service providers and also politicians.

Modern communication information technologies in health care are becoming more and more important, both at the level of a physician doing his job and the national of transnational level. On the one hand they reduce the cost of administration and health care services which are constantly growing, on the

¹⁶ J. B. Karski, Promocja zdrowia dziś i perspektywy jej rozwoju w Europie, CeDeWu.PL, Warszawa 2009, p. 49.

¹⁷ Definicja podana przez Journal of Medical Internet Research, J. B. Karski, Promocja zdrowia dziś i perspektywy jej rozwoju w Europie, *op. cit.*, p. 98.

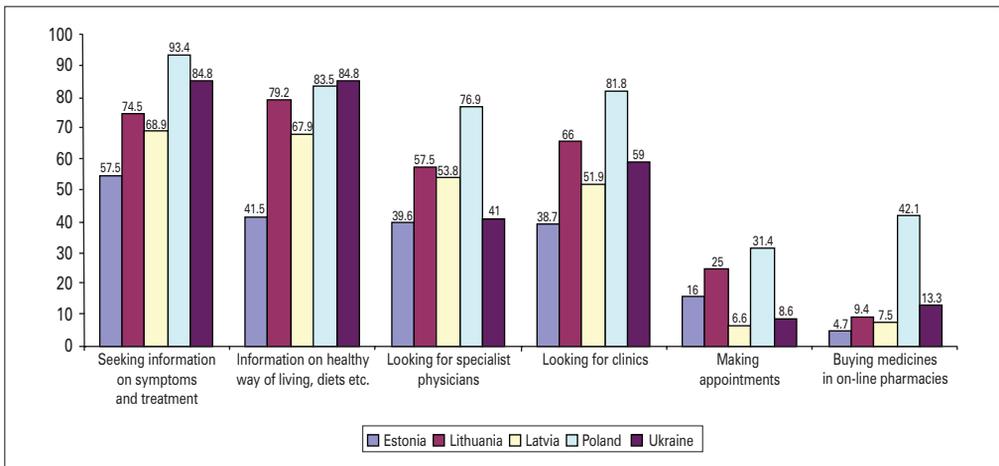
other to the greater and greater degree they are used by citizens to acquire information on the broadly perceived health.

E-health may contribute to better care at lower costs within the health care system. Without major reforms, including the use of e-health, it is predicted that there will be a rise in health care outlays from the present 9% of GDP to 16% in 2020 due to the ageing of Europe¹⁸.

E-health, as it is underlined, means for patients easier access to the specialist physicians, the introduction of e-prescriptions or introduction of e-referrals thanks to electronic exchange will accelerate and improve the treatment process. It is also a good method to manage the physicians working time better as well as a chance to improve the economic results of medical centres.

The results of the survey carried out among internauts in selected countries of Central and Eastern Europe show that the Internet is for them first of all the source of information on the symptoms and treatment and on the healthy style of life. The inhabitants of Poland proved to be most active in this area as well as in other survey e-health forms. The least active those in Estonia though the work on e-health is well advanced¹⁹. Making appointments and buying medicines in the Internet pharmacies were the least interesting for the respondents, Fig. 3.

Figure 3. E-health use in selected countries of Central and Eastern Europe in 2008 (in percentages)



Source: own material based on the research report Consumer on the market of e-services in Central and Eastern Europe.

¹⁸ Inicjatywa rynków pionierskich dla Europy, Komunikat Komisji do Parlamentu Europejskiego, Rady, Europejskiego Komitetu Ekonomiczno-Społecznego i Komitetu Regionów, Bruksela, dnia 10.12.2008, KOM (2008) 666, final version.

¹⁹ E-stonia i e-zdrowie, cafebabel.com Magazyn Europejski, www.cafebabel.pl./article..., [17.04.2010].

3.3. E-education

The European Union Council resolved: "Education is more than a factor to give opportunity for employment – preparing for a career contributes to self-realisation and an active civic spirit in democratic communities, in which cultural and language diversity is respected. Education also plays a crucial role in the creation of well integrated society preventing discrimination, marginalisation, racism and xenophobia, it also promotes such fundamental values followed by the European community as tolerance and respect for human rights. In the epoch of knowledge and globalisation the development of the internally coherent and open European educational area will be essential for the future of Europe and its citizens"²⁰.

The educational system is especially important for the transformation towards to global information community. The report on the social development devoted to this problem points to the following educational goals: education of citizens communicating, learning and creating in the condition of more and more universal access to information communication technologies and what follows – information. The information community causes changes among others in the system of education. There should be a comprehensive application of electronic mass media and didactic media within educational activities.

Education is one of the most important factors of economic development and also the most effective investment. It is estimated that in the OECD area the rise in the average time of the acquisition of education of one year results in the economic growth of 3–6% in the long run. There is also the positive impact of education on health and social cohesion²¹.

It is pointed out increasingly that in the future new teaching technologies will dominate. Schools will stop being institutions where knowledge is acquired, they will become teaching institutions. The market of educational services will develop offering more diversity, non-traditional and flexible forms of passing knowledge, from short weekend courses addressed to different social professional groups to on-line courses, also from universities to home self-study.

The media and the Internet enrich the forms of distance learning. One of these forms is on-line education, which makes use of resources and communication possibilities of the Internet.

E-education is a new form of teaching to enable studying in any place, time and pace, which is essential in the case of a distant place of residence or disability. It supports projects that aim at affirmative actions in youth education and teaching

²⁰ Edukacja w Europie, European Commission, Warsaw 2003.

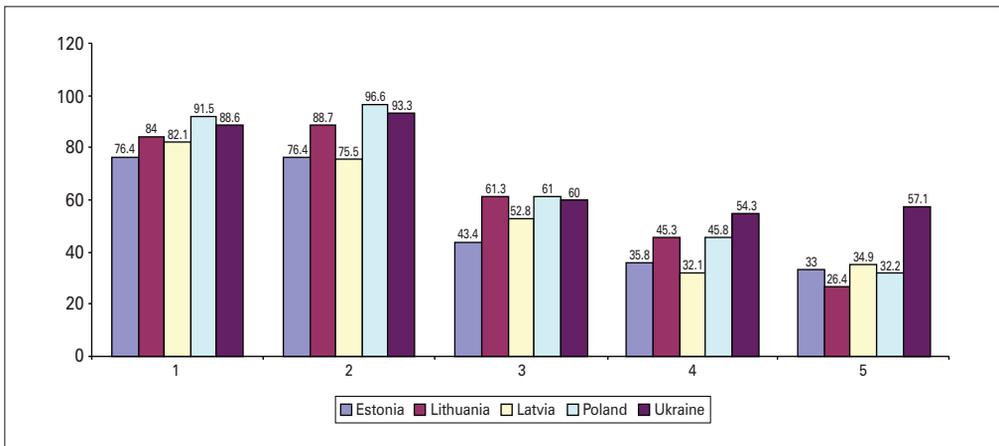
²¹ A. Hargreaves, *Understanding Educational Change*, in: *The New Meaning of Educational Change*, ed. M. Fullan, New York 1991; R. Pawlak, *Polska reforma oświaty a europejska polityka edukacyjna*, „Studia Europejskie”, No. 3(31) 2004, p. 106.

adults in order to fight unemployment, retrain and improve occupational skills²². Its unquestioned value is, from the perspective of students or trainees, the opportunity for unlimited contact with lecturers, e.g. through e-mail or discussion forum, and also time saving due to no necessity of commuting. Its superiority over other methods consists of transferring the centre of gravity from the teacher to the student.

E-education is all the time a new but dynamically developing form of teaching. The research on the use of e-education through the Internet (e-services) in countries of Central and Eastern Europe showed its diversification resulting from both supply factors connected with tele-information infrastructure and demand factors connected with needs, skills and economic opportunities to use this infrastructure.

The survey was to answer the question on the scope and frequency of use of different forms of services. The most popular among respondents was seeking knowledge based on information, which means, taking into account also the use of other e-services, that the Internet is first of all a source of information. On-line dictionaries and translators took also high interest. There was relatively low interest in the Internet courses and trainings. It is assumed that visiting university websites, especially those presenting teaching materials, is addressed to definite groups of people to whom they are addressed and often require logging in, Fig. 4.

Figure 4. E-education use in selected countries of Central and Eastern Europe in 2008 (in percentages)



Legend: 1. Use of on-line dictionaries, translators, 2. Seeking knowledge based information, 3. Visiting university websites, 4. Visiting teaching material sites, 5. Use of Internet courses and training.

Source: own material based of the research report Consumer on the market of e-services..., *op. cit.*

²² See Społeczeństwo informacyjne. Wybrane aspekty gospodarki elektronicznej, ed. C. Hales, M. Sarama, Wydawnictwo Max – Druk Drukarnia Medyczna, Rzeszów 2009, p. 311.

E-education use is not only diversified in relation to the form but also the country. Interestingly, Ukrainian respondents are very active, especially in the area of the Internet courses and training. Those that make use of them, do it frequently (5 times or more), and differences in comparison with the frequency in other countries are 2-fold, and with reference to Poland even 3-fold. The respondents from the Ukraine were also most active in other e-education forms, except for visiting university websites.

4. Leisure e-services: e-commerce, e-culture, e-tourism

Time belongs to extremely rare and precious goods, subject to the principles of value in exchange. Leisure takes an important place in the structure of people's time budget. It may be spent on shopping, rest, satisfying interests, development of personality etc.

4.1. E-commerce

The Commissioner for Consumer Protection M. Kunewa said: "Consumers can only benefit from the Internet. It extends the available market, offering a wider selection of products and suppliers and enables comparison of offers and prices on the unprecedented scale. E-retail will become more and more common. Shopping is being done in this way by more than 150 m consumers, though only 30 m are making purchases in foreign Internet shops. We must see to it that e-commerce should not be unnecessarily slowed down due to the fact that some legal barriers have not been removed or important problems affecting customer confidence remain unsolved"²³.

The development of e-commerce, which means business done by commonly available tele-information networks, is a response to the demand of present consumers who appreciate time, comfort, pace of information flow and need satisfaction. Common availability of goods and services on-line (in the country and abroad) makes every, even the most sophisticated customer find something of interest for themselves, which naturally does not have to result in a purchase.

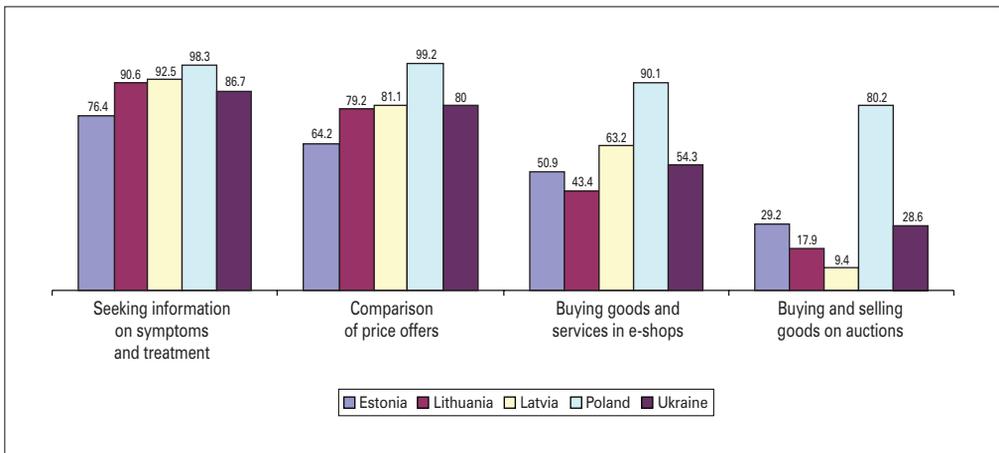
The inclination to e-commerce use depends on a lot of factors, namely: Internet experience, openness to e-custom, motives behind e-commerce use or reason for not buying in traditional shops. It is increasingly stressed that e-commerce is not only a fast developing transaction area: it is a trade revolution.

²³ Consumer Affairs: E-commerce is more and more popular in the EU but its development is slowed down by trans-border trade obstacles, Brussels, 5 March 2009 IP/09/354.

In the period of 2007–2008 the leaders (above 50% on-line customers) are all the time: Norway (on-line customer share has not changed in recent years), Denmark (growth of 3 pp.), Great Britain (growth of 4 pp.), Holland (1 pp.), Sweden (no change), Germany (1 pp.) and Finland (3 pp.). The countries of the highest growth in on-line custom include: Slovakia (7 pp.), the Czech Republic (6 pp.), France (5 pp.), Latvia (5 pp.) and Cyprus recorded a decline of 1 pp.

The authors' research indicates that reasons for which consumers/internauts from Estonia, Lithuania, Latvia, Poland and the Ukraine decide to make e-purchases are diversified, Fig. 5.

Figure 5. E-commerce use in selected countries of Central and Eastern Europe in 2008 (in percentages)



Source: own material based of the research report Consumer on the market of e-services in Central and Eastern Europe.

Seeking information on goods and services and the comparison of price offers take most interest but does not translate directly into e-purchases. The Internet may only be an impulse to make certain purchasing decisions in the real world. Before customers make a decision to buy a product in a brick and mortar shop, they seek information on the Internet, compare offers, including prices. It can be said then that this modern medium influences the consumer behaviour in reality²⁴.

The development of e-commerce in the Ukraine depends not only on the technical capacities of entrepreneurs but also psychological readiness of potential

²⁴ Consumer behaviour means acquired inclination to positive or negative reaction to market phenomena. It may refer to for instance buying in on-line shops. cf. A. Falkowski, T. Tyszką, *Psychologia zachowań konsumenckich*, Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2006.

users. E-commerce, to a large extent, develops in the Ukraine at the background of the world financial crisis effects and in the situation of changing consumer moods. Most often Ukrainian consumers seek the Internet information on household goods (73.7%), mobiles (62.5%) and computers (61.7%)²⁵.

It results from the report *Shop of the Future 2012–2015* made at the request of Visa Europe²⁶ that in the coming years there should be enormous changes in the retail trade. Retailers from all over Europe pointed to several essential factors like business social responsibility, new payment technologies as well as consumers' customs and behaviour which, in their opinions, are thoroughly transforming their outlets and the whole sector. Vice-President of Visa Europe, Kelvin Smith, said: "As the research results indicate, the shop of the future will make use of the whole range of new technologies aimed at a single goal: more comfort for the customer through a higher degree of individualisation of the Internet services translating into business success. [...]"

4.2. E-culture

Digital technologies and the network environment pose challenges and prospects for culture, there are new forms of cultural expression. Technological progress made art enter the web: books, films, paintings were subject to digitalisation. The application of digital technologies lets the work of the intellect be copied and distributed an indefinite number of times, among a countless number of addressees and destinations, even without the authors' permission. Information technologies are perceived as a catalyst in the process of cultural changes.

New information communication technologies on the one hand change the way of creation and distribution of products and services of culture, on the other its consumption. The development of new technologies facilitates making individualised and enriched offers, with new multimedia and interactive services, by different cultural service providers.

The Internet and new media create new possibilities of participation in cultural life, they are applied in cultural activity and Internet promotion extends the possibility of participating in the world culture from home. Numerous internauts interested in culture treat the web as a collection of works of art. Another form of cultural activity of Internet users is different portals, which

²⁵ Ю. Пачковский, Украинский потребитель и интернет-потребление: общий анализ проблемы, w: Konsument w europejskiej przestrzeni, ed. A. Dąbrowska, I. Ozimek, IBRKiK Warszawa 2009, pp. 55 ff.

²⁶ Report *Shop of the Future 2012–2015*, made at the request of Visa Europe by a British research centre for Retail Research. It presents results of a survey carried out among 300 large and medium sized companies in seven European countries: France, Germany, Italy, Holland, Norway, Sweden and Great Britain. The respondents were asked about the predicted course of changes in all retail trade in the period of 2012–2015, www.visaeurope.com [30.05.2009].

present the current repertoires of cinemas, theatres, galleries and museums, or initiatives undertaken by non-governmental institutions, private individuals or institutions that do not normally deal with this sort of activity. Cultural departments of the Internet information services also perform this function. Besides those promoting artistic work, there are a lot of education services dealing with creation in the aesthetic as well as technical way, rules and principles, knowledge of aesthetics and theory of art etc.

“We are living in the period of transition from the analogue culture to digital culture. Digitalisation creates potential opportunities for all, but in long run, or even forever, there will be a division into active and passive consumers. /.../ The recipients may not only be the suppliers at the same time but they can make offers and topical channels for themselves. Some perceive it as cultural breakthrough /.../”²⁷. Modern information communication technologies have already won their position in the process of satisfying cultural needs. In this situation we speak about the virtualisation of culture.

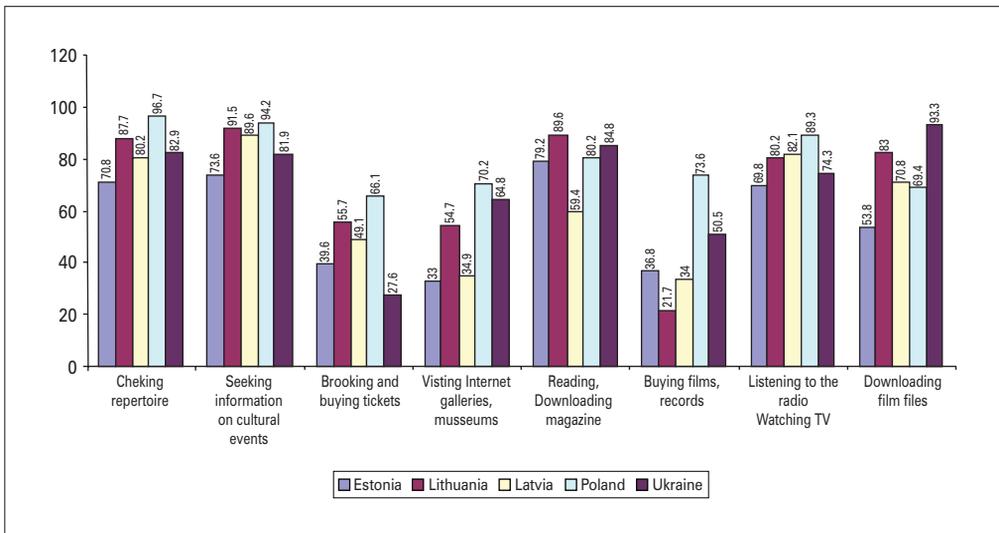
The participation in culture through the Internet takes different forms from for instance seeking information on cultural events or checking repertoire through virtual visits to museums to more involved participation, where the users themselves become the authors or co-authors of newly created values.

E-culture was also surveyed in selected countries of Central and Eastern Europe. The results show differences in relations to the use of e-culture in these countries. The highest percentages referred to reading and downloading magazines in Estonia, seeking cultural information in Lithuania and Latvia, checking repertoire in Poland and downloading film files in the Ukraine. The least interest (lowest percentages) referred to buying films and records in Estonia, Lithuania and Latvia and buying tickets in Poland and the Ukraine, Fig. 6.

What is worth mentioning is the nature of participation in e-culture. The only considered in the research form of participation in e-culture whose final implementation is held in cultural institutions/outlets is in reality *booking and purchase of tickets*, which is connected with the access to these outlets. It comes as no surprise though that the respondents making use of this form were persons assessing their material situation as good (except for Latvia) and those living in big cities. Cities attract human activity in all areas of social life, including cultural life, which enables people to make more diversified and complete choice, to reflect individual preferences more accurately.

²⁷ K. Krzysztofek, Media w perspektywie globalizacji i cyfryzacji. Implikacje dla Polski, in: Społeczne i ekonomiczne uwarunkowania rozwoju kultury, 2nd National Congress CULKTURE-ECONOMY-MEDIA, Kraków-Warsaw 2003, p. 199.

Figure 6. E-culture use in selected countries of Central and Eastern Europe in 2008 (in percentages)



Source: own material based of the research report Consumer on the market of e-services..., *op. cit.*

4.3. E-tourism

The idea of tourism is of a dual nature. Tourism may be perceived as a group of organisations, i.e. tourist accommodation together with infrastructure, organisers of recreation and tourist events with their palette of offers and its use²⁸. Furthermore it may refer to all activities of intentional travellers away from their residence up to 12 months²⁹. In the latter, leisure is of great importance.

Tourism is presently regarded to be the world phenomenon, the most characteristic occurrence of our epoch. It has become a mass occurrence affecting a number of areas of human life. Modern technologies have a considerable impact on the market of tourist services and its development. Tourist companies, like tourists, must follow the spirit of the time and make use of appropriate infrastructure: computer and the Internet. The latter enables reaching customers with new offers and service products by firms from the tourist industry, both on-line and traditional ones³⁰.

²⁸ UNWTO announces that the number of tourist arrivals in the world in 2005 came up to 800 m, and incomes accounted for about USD 700 m. Data acquired in the Ministry of Economy, Tourist Department.

²⁹ Cf. Turystyka w 2000 roku. GUS, Warszawa 2001.

³⁰ More on tourism in Poland: A. Dąbrowska, M. Janoś-Kresło, E-turystyka a zachowania nabywców i klientów, in: Zachowania konsumentów na rynku turystycznym, ed. B. Dobięgała-Korona, ALMAMER Wyższa Szkoła Ekonomiczna, Warsaw 2010, pp. 149 ff..

E-tourism illustrates how the Internet allows customers to familiarise themselves with offers made by travel agencies, in the country or abroad, to visualise them, to compare tourist products and prices, to book a trip or a ticket, to make payment, exchange experience with other internauts on travel agencies, the quality of customer handling and providing services according to the agreement concluded or stay at the destination. The development of e-tourism facilitates the globalisation of demand and supply of tourist products and services, stimulating the development of tourism, providing tourists with effective tools to identify and buy suitable products, and their providers with distribution of offers and also their management on a global scale³¹.

When characterising e-tourism it must be remembered that the on-line pattern may apply to both phases: pre-sales and after-sales, whereas the consumption itself of a tourist service, up to now, has taken place only in the real world.

In the course of recent years the share of on-line sales in the tourist industry has risen successively. In the USA for the first time in history, the share of on-line sales in the tourist industry exceeded the level of 50% in 2007, and in the forecast for 2008 the 59% growth was mentioned. In Europe on-line sales are all the time lower than those by traditional travel offices, but there is a high growth dynamics. In 2006 they accounted for nearly 28%, and the forecast for 2008 assumed reaching 40% of the whole tourist market³².

UNWTO encourages its member countries as well as developing countries to make use of the possibilities given by the access to information and the Internet. It supports the e-tourism strategy and the acquisition of new customers through this medium³³.

Tourists make use of the Internet and search engines more and more consciously, they are better educated and their expectations of destinations are more precise. Tourists more willingly read others opinions, analyse and compare prices, visit websites of definite tour operators, those traditional and on-line. The information they are seeking is more complex and diversified, and the scope is unlimited.

The report makes an attempt to determine the objective of the Internet use in the area of e-tourism, Fig. 7. In Estonia the most highly rated factor was: the use of tourist services, in Lithuania: tour operators' websites and comparison

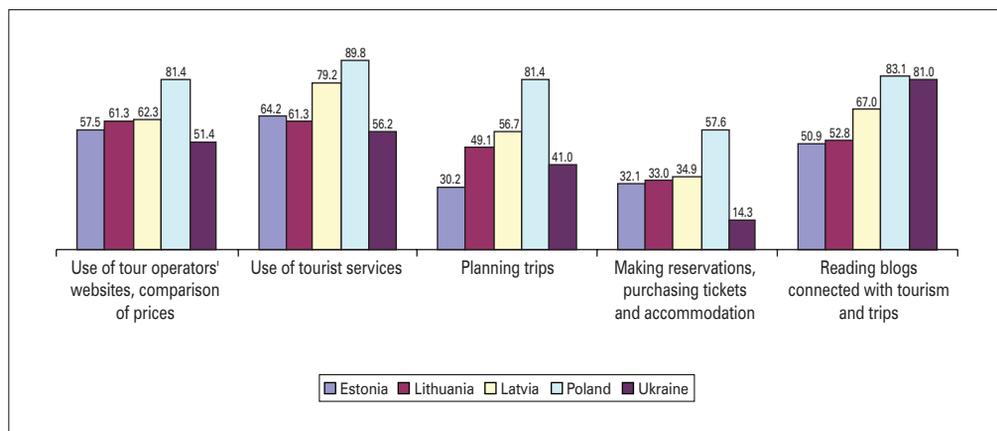
³¹ W. W. Gaworecki, *Turystyka*, PWE, Warszawa 2007, p. 277.

³² Travelplanet.pl., Raport analityczny, Dom Maklerski PKO BP, Warszawa, 31.10.2008, http://www.relacje.travelplanet.pl/gfx/dokumenty/Zdjecie3_00000003.pdf

³³ In the period of 24 May to 6 June 2008 in Spain there was a seminar organised by UNWTO for the representatives of tourism administrators from the Member Countries. E-tourism was one of the topics. UNWTO founded an Internet portal SOS.travel <http://www.ternalert.org/>, which publishes, among others, information on safe travelling.

of offers, in Poland the lowest rated factor was: making reservations purchasing tickets and accommodation, in the Ukraine e-tourism refers more often to reading blogs connected with tourism and trips.

Figure 7. Fig. 6. E-tourism use in selected countries of Central and Eastern Europe (in percentages)



Source: own material based of the research report Consumer on the market of e-services., op. cit.

It is worth mentioning that in Great Britain every fourth purchase of tourist services is made on the Internet, whereas in Central and Eastern Europe every tenth³⁴.

The report *Tourist Products and Services on the Internet* indicates that if really the model of decisions made by Polish consumers will follow the western trends, the next few years may see a dynamic growth of the Polish market of on-line tourist services.

It may be expected that interest in e-tourism will be growing, which will result in the creation of new portals. New, cheaper and more effective channels of distribution will acquire new followers. It is also the way to reach a carefully selected customer.

5. Conclusion

The technological revolution in the contemporary world exerts a considerable influence on the market of services and the way they are rendered. Together

³⁴ Produkty i usługi turystyczne w Internecie, http://www.travelmarketing.pl/upload/raport/google_pl_bro_research_report_lowres.pdf [8.01.2009].

with the development of the Internet, numerous changes have appeared on the service market, which offers more and more activities to be done on-line.

There are also changes in demand of consumers, who expect increasingly interesting offers well-adjusted to their needs in various areas of life. Present-day e-services consumers are customers who are not satisfied with services offered by the service providers, they affect actively the shape and development of services and the way they are offered.

E-services development is a response to the changing reality, to the new economic, market and consumption reality. It is worth stressing that e-services are synonymous with modernity, expression of progress and an element of the construction of information community. The Internet used by service providers is a great chance to improve competitiveness, innovativeness and management effectiveness. Whether these advantages are achieved or not depends on the accessibility and proper use of economic instruments by consumers.

The results of the research done in five countries of Central and Eastern Europe: Estonia, Lithuania, Latvia, Poland and the Ukraine determined the perception of e-services in the country under investigation at the background of Europe as well as their diversified use in these countries.

Bibliography

1. Adamski D. et al, e-Administracja, prawne zagadnienia informatyzacji (E-Administration, Legal Aspects of Informatisation), ed. D. Szostak, Pressom Sp. z o.o., Wrocław 2009.
2. Consumer Affairs: E-commerce is more and more popular in the EU but its development is slowed down by transborder trade obstacles, Brussels, 5 March 2009 IP/09/354.
3. Dąbrowska A., Janoś-Kresło M., E-turystyka a zachowania nabywców i klientów (E-tourism and Behaviour of Buyers and Customers), in: Zachowania konsumentów na rynku turystycznym (Consumer Behaviour on the Tourist Market), ed. B. Dobiegała-Korona, ALMAMER Wyższa Szkoła Ekonomiczna, Warsaw 2010.
4. Dąbrowska A., Janoś-Kresło M., Wódkowski A., E-usługi a społeczeństwo informacyjne (E-services and Information Community), Difin, Warszawa 2009.
5. Dąbrowska A., Rozwój rynku usług w Polsce – uwarunkowania i perspektywy, Oficyna Wydawnicza SGH, Warsaw 2008.
6. Edukacja w Europie (Education in Europe), European Commission, Warsaw 2003.
7. E-stonia i e-zdrowie (E-stonia and e-health), cafebabel.com Magazyn Europejski, www.cafebabel.pl/article..., [17.04.2010].
8. Eurostat, <http://epp.eurostat.ec.europa.eu/tgm/printTable...>, [21.08.2009].

9. Falkowski A., Tyszka T., *Psychologia zachowań konsumenckich* (Psychology of Consumer Behaviour), Gdańskie Wydawnictwo Psychologiczne, Gdańsk 2006.
10. From ICT to E-Culture. Advisory report on the digilisation of culture and the implications for cultural policy, Netherlands Council for Culture, Submitted to the Netherlands State Secretary for Education, Culture and Science, June 2003, English edition August 2004, The Hague, www.cultur.nl/e-culture...
11. Gaworecki W. W., *Turystyka*, PWE, Warsaw 2007.
12. Haan J., Huysmans F., *Revolution or Evolution? An Empirical approach to eCulture*, w: *eCulture: The European Perspective Cultural Policy, Creative Industries, Information Lag*, Proceedings from the Round Table Meeting, Zagreb, 24–27 April 2003, Institute for International Relations, Zagreb 2005.
13. Hargreaves A., *Understanding Educational Change*, in: *The New Meaning of Educational Change*, ed. M. Fullan, New York 1991.
14. http://www.relacje.travelplanet.pl/gfx/dokumenty/Zdjecie3_00000003.pdf
15. *Human Development Reports 2001: Making new technologies work for human development*, Published for the United Nations Development Programme (UNDP), New York- Oxford, Oxford University Press 2001.
16. *Inicjatywa rynków pionierskich dla Europy* (Pioneer Markets Initiative for Europe), Commission's Communique for the European Parliament, Council, Social and Economic Committee and Committee of the Regions, Brussels 10 December 2008, KOM (2008) 666, final version.
17. Karski J. B., *Promocja zdrowia dziś i perspektywy jej rozwoju w Europie* (Health Promotion Now and Its Development Prospects in Europe), CeDeWu.PL, Warsaw 2009.
18. Kiepas A., *The Internet a kultura – wyzwania dla człowieka i społeczeństwa* (The Internet and Culture- Challenges for Man and Community), in: *The Internet – społeczeństwo informacyjne – kultura* (The Internet – Community – Culture), Śląskie Wydawnictwo Naukowe WSzZiNS, Tychy 2006.
19. Kotler Ph., Armstrong G., *Principles of Marketing*, Pearson Education, Inc., Upper Saddle River, New Jersey 2010.
20. Kraus A., *Informacyjne usługi cyfrowe we współczesnym społeczeństwie i gospodarce* (Digital Information Services in Modern Community and Economy) in: *Spółeczeństwo informacyjne. Wybrane aspekty gospodarki elektronicznej* (Information Community. Selected Aspects of Electronic Economy), ed. C. Malesa, M. Saramy, Uniwersytet Rzeszowski, Wydawnictwo Max – Druk Drukarnia Medyczna, Rzeszów 2009.
21. Krzysztofek K., *Media w perspektywie globalizacji i cyfryzacji. Implikacje dla Polski* (Media from the Perspective of Globalisation and Digitilisation), in: *Spółeczne i ekonomiczne uwarunkowania rozwoju kultury* (Social and Economic Determinants of the Development of Culture), 2nd National Congress CULTURE-ECONOMY-MEDIA, Kraków-Warsaw 2003.

22. Luterek M., e-government. Systemy informacji publicznej (Public Information Systems), Wydawnictwa Akademickie i Profesjonalne, Warsaw 2010.
23. Пачковский Ю., Украинский потребитель и интернет-потребление: общий анализ проблемы, in: Konsument w europejskiej przestrzeni (Consumer in the European Space), ed. A. Dąbrowska, I. Ozimek, IBRKiK Warsaw 2009.
24. Pawlak R., Polska reforma oświaty a europejska polityka edukacyjna, „Studia Europejskie” (Polish Educational Reform and European Educational Policy, “European Studies”), No. 3(31) 2004.
25. Produkty i usługi turystyczne w Internecie (Tourist Products and Services on the The Internet), http://www.travelmarketing.pl/upload/raport/google_pl_bro_research_report_lowres.pdf [8.01.2009].
26. Raport Sklep Przyszłości 2012-2015 (Report Shop of the Future 2012-2015), www.visaeurope.com [30.05.2009].
27. Solomon M. R., Zachowanie i zwyczaje konsumentów (Consumer Behaviour and Habits), Wydawnictwo HELION, Gliwice 2006, 6th Edition.
28. Społeczeństwo informacyjne. Wybrane aspekty gospodarki elektronicznej (Information Community. Selected Aspects of Electronic Economy), red. C. Hales, M. Sarama, Wydawnictwo Max – Druk Drukarnia Medyczna, Rzeszów 2009.
29. Springer W., Wpływ wirtualizacji przedsiębiorstw na modele e-biznesu. Ujęcie instytucjonalne (Impact of Corporate Virtualisation on e-Business Models. Institutional Perspective), Szkoła Główna Handlowa w Warszawie, Warsaw 2008.
30. Światowy G., Zachowania konsumentów (Consumer Behaviour), Polskie Wydawnictwo Ekonomiczne, Warsaw 2006.
31. Travelplanet.pl., Raport analityczny (Analytical Report), Dom Maklerski PKO BP, Warsaw, 31.10.2008.
32. Turystyka w 2000 roku. GUS, Warsaw 2001.
33. Uzelac A., eCulture: Cultural Goods Between Public Domain and Private Proper, http://www.imo.hr/~sandra/docs/uzelac_eculture-proceedings.pdf

The Financial Independence of Local Self-Government Units in the Acquisition of Sources to Finance Their Activity – The challenges for Self-Government Theory and Practice

1. Introduction

The need for reform of tax revenues of local self-government units (JST) in Poland is unquestionable¹. The efficient administrative work of self-government depends naturally also on the construction of a tax system.

One of the basic self-government principles is the principle of independence, which does not certainly mean autonomy, i.e. complete independence from the state. Local self-government units enjoy the legally² guaranteed independence within the area based on the competence entrusted by the state. There is a necessity for the establishment of the role of self-government – confining its functions to public utilities (this is what it was appointed for) or assigning it a considerably broader scope, i.e. influencing the entities operating in the area³.

Contemporary states, as indicated by A. Szewczyk, treat local self-government as a comfortable and dynamic system facilitating the process of management of public tasks⁴. E. Kornberger-Sokołowska claims that while making use of its central institutions, the state has to be capable of emergency intervention through certain financial instruments⁵ in the area of public tasks performed by self-government.

¹ The author is aware of the fact that this expression may be considered too harsh and far reaching, taking into account the subsidy model developed of financing local self-government in Poland. The imperfectness of the Polish real estate tax system justifies the need for its thorough restructuring.

² Law making is based on constitutional, international law and common legislation standards.

³ It is indicated for instance by E. Denek, *Podatki w gospodarce samorządu terytorialnego w warunkach integracji europejskiej*, in: *Finanse*, ed. by B. Pietrzak, Oficyna Wydawnicza Szkoły Głównej Handlowej w Warszawie, Warsaw 2005.

⁴ A. Szewczyk, *Finanse polskich gmin w świetle Europejskiej Karty Samorządu Terytorialnego*, in: *Finanse, Banki i Ubezpieczenia w Polsce u progu XXI wieku*, Vol. I – *Finanse publiczne*, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2000, p. 199.

⁵ E. Kornberger-Sokołowska, *Budżet państwa a budżety jednostek samorządu terytorialnego*, in: *Stan i kierunki rozwoju finansów samorządu terytorialnego*, ed. by L. Patrzalek, Wydawnictwo WSB w Poznaniu, Poznań, 2007, p. 29.

Thus, local self-government was perceived a basic form of of organisation of public life on a local scale implementing public tasks prescribed to it statutorily and ordered by the central administration. The prerequisite for conducting local policy is a possibility of making sovereign and rational decisions at this level.

The idea of independence is a category that has not been defined explicitly in the current legal regulations or substantive literature.

The views presented in the scholarly literature on the notion of the independence of local self-government units justify the conclusion that this notion should be considered from the legal, political, economic and organisational perspectives⁶. Let us emphasise the significance of JST, as thanks to this category, it is possible to determine the framework of their operation and real possibilities of the completion of tasks assigned to them⁷.

The financial independence of local self-government units reflects the process of decentralisation of public finance; however, it would not be well-founded to treat it in isolation from the accepted model of state and current public finance system. Admittedly, local self-government is a separate public and legal association; however it works within the public sector, which means some state intervention in the form of supervision by its specific bodies. For these reasons this article ignores the outermost variations meaning extreme decentralisation, definitely not to be accepted in the modern states (of the unitary model of state). Complete independence giving the right to set the principles of operation independently of the central institutions would result in the reduction of the role of state.

2. Decentralisation of public finance – arguments for and against

An important issue to settle is the problem of the administrative power of local self-government to conduct tax policy on its own territory. Let us present then the arguments for the decentralisation of decision processes and strong self-government structures, and on the other hand their centralisation and complete subordination.

To follow S. Owsiak, an opinion may be expressed that both in the theory and practice of public finance, there is a regularity indicating that the closer the fund managers are to the community in favour of which they work⁸, the more effective the use of public funds.

⁶ See: e.g. M. Dylewski, B. Filipiak, M. Gorzałczyńska-Koczkodaj, *Finanse samorządowe. Narzędzia, decyzje, procesy*, Wydawnictwo Naukowe PWN, Warsaw 2006, p. 13.

⁷ B. Filipiak, *Wpływ zmian w podatkach i opłatach lokalnych na samodzielność finansową gminy*, in: *Polski system podatkowy. Założenia a praktyka*, A. Pomorska (ed.), Wydawnictwo UMCS, Lublin 2004, p. 242.

⁸ S. Owsiak, *Finanse publiczne. Teoria i praktyka*, Wydawnictwo Naukowe PWN, Warsaw 1998, p. 101.

This regularity may be explained based, for instance, on:

- the principle of centralisation developed by W. Oates⁹, according to which: public services should be provided by the authority controlling the least possible geographic area to be able to assimilate the benefits and costs of the provision of public services. W. Oates argues as follows: local authorities understand the problems of their people, local decision making is characterised by sensitivity to the needs of people the services are designed for; unnecessary authorities are delayed, competition between local self-governments is on the rise and innovativeness is improved,
- the principle of adequacy within which C. Tiebout¹⁰, proved that competition between local units results in a more effective provision of public goods (allocation effectiveness),
- the principle of regulation within the “theory of public choice” by G. Stigler¹¹, who suggested that the community should decide on the kind and quantity of public goods and services they want to receive and the authorities should be as close as possible to them, as they then work the best.

Sharing the view that decentralisation of public finance favours the rational use of public funds, let us consider objective arguments for decentralisation or centralisation (Table 1).

Research carried out by R. Prud’homme¹² looks interesting on this background. Making an assessment of two basic models of management in the public sector, he assumed four groups of criteria to determine the scope of decentralisation and structure of spending at different levels of authority. He included the following:

- 1) economic efficiency analysed in two questions: whether allocation of goods and services corresponds to the definite levels and whether the package of goods and services is produced effectively;

⁹ W. Oates, The Effects of Property Taxes and Local Public Spending on Property Value: An Empirical Study of Tax Capitalization and Tiebout Hypothesis, „Journal of Political Economy”, 1972, No. 77, pp. 957–971, cf. G. Kozuń-Cieślak, Decentralizacja władzy i zasady delegowania kompetencji – podejście teoretyczne, in: *Finanse 2009 – Teoria i praktyka. Finanse Publiczne I*, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 2009, p. 185.

¹⁰ C. Tiebout, A Pure Theory of Local Expenditures, „Journal of Political Economy”, 1956, No. 64 (5), pp. 416–424, cf. G. Kozuń-Cieślak, Decentralizacja władzy i zasady delegowania kompetencji..., *op. cit.*, p. 184.

¹¹ G. Stigler, The Tenable Range of Functions of Local self-government, in: *Federal Expenditures Policy for Economic Growth and Stability*, ed. Joint Economic Committee, Subcommittee on Fiscal Policy, U.S. Congress, Washington, DC; U.S. Government Printing Office, 1957, pp. 213–219, cf. G. Kozuń-Cieślak, Decentralizacja władzy i zasady delegowania kompetencji..., *op. cit.*, p. 183.

¹² R. Prud’homme, Fiscal Decentralization and Inter-governmental Fiscal Relations, A summary report prepared for the UNCDF symposium on Decentralization Local Governance Africa, 2001 cf. I. Begg, European Union Financing, *New Europe*, No. 1 (3) 2006.

- 2) political effectiveness perceived as: opportunity to generate their preferences by citizens at the local level; strengthening of democracy through the creation of an effective local decision level encouraging participation in decision making; counterbalance to a too powerful central authority;
- 3) macroeconomic stabilisation through the impact of the fiscal system assuming that more centralised systems serve stabilisation better;
- 4) redistribution as the policy major function, noting that decentralised systems most frequently make disproportions larger.

Table 1. Selected advantages of the decentralisation and centralisation of authority

Advantages of decentralisation	Advantages of centralisation
<ol style="list-style-type: none"> 1. Better knowledge of citizens' expectations and readiness to finance them. 2. Higher ability of voters to square accounts with "closer" authority and also to control it (through mass media). 3. Lower probability of inefficiency of authority (assuming its transparency and accountability). 4. Opportunity to create tax competition. It minimises the risk of apodictic authority, characteristic of inefficient authority. 5. Easiness of policy adjustment to citizens' needs. A suitable level of the stream of public goods and services is ensured then. 6. Policy easily adjustable to the changing conditions (policy flexibility). 	<ol style="list-style-type: none"> 1. Saving (i.e. indivisibility of public goods and services) – central level may be more effective as it can deliver the public goods at a lower manufacturing costs. 2. Cumulation of threats due to fluctuations of demand for public services. 3. Lack of opportunity to limit the use of public goods, which results in their insufficient supply at decentralised levels. 4. "Levelling effects" (inside and outside) between the unit of local competence and others of different competences. 5. Avoidance of double regulations. 6. Better bargaining position.

Source: materials based on I. Begg, European Union Financing, New Europe, no. 1 (3) 2006.

R. Prud'homme claims that the criteria connected with economic efficiency and political effectiveness generally favour the decentralised approach, whereas criteria of macroeconomic stabilisation and redistribution support centralisation. It seems, however, that the presented conclusions are not universal, which is confirmed by R. Prud'homme himself, who emphasised that they depend on the situation of the country as the level of revenues, administrative tradition or geography are also significant.

I think the research mentioned above quite adequately correspond to the problems faced by the decentralisation of public finance. Admittedly,

decentralisation of public finance can be perceived as a solution in favour of the effective management of public funds; one cannot, however, fail to notice the problems that appear in connection with these processes. They include the issues of financial imbalance of different units of local self-government and the provision of macroeconomic stabilisation.

Furthermore, some authors claim that the operating federal structures, considerably decentralised, generate high costs. P. M. Gaudemet and J. Molinier say: “far reaching decentralisation is generally expensive. Local communities enjoying big financial autonomy are usually overspending, local authorities set free of the supervision of central authorities tend to spend excessively and multiply taxes”¹³. L. Patrzalek’s views are partially coincident with this point of view. He argues that “in the condition of chronic shortages of public funds and unlimited collective needs, there is a real threat that local self-government units can take maximum advantage of the independent creation of elements of tax construction, which may result in depreciation of this right as well as the possibilities involved, bringing it down to the fiscal function only”¹⁴. It should be mentioned, however that the cited author also notices the problem of appearance of the opposite situation, when local self-government units for variety of reasons would not make use of their right to collect taxes, which could result in the considerable reduction of their revenues¹⁵.

Decentralisation is reflected, for instance, in equipping local self-governments with a certain range of taxes (exclusiveness of sources, creation of certain elements of tax construction). Assessing the system of revenues of local self-government units, it should be remarked that their right to obtain revenues from specific taxes results from the legislator’s will. N. Gajl claims that there are no legal obstacles to make the local self-government units responsible for every kind of tax¹⁶. The delegation of tax revenues, turnover and expenditure taxes to local self-governments (understood as taking over revenues, tax administrative power) means the limitation of state administrative power, and in the case of extreme decentralisation also the reduction of the role of state.

Without the thorough analysis of the discussions on the limits of local self-government autonomy, it can be said that the state performs public, social and economic functions together with local self-government units. The division of duties and competences between the state and local self-government is arbitrary

¹³ P. M. Gaudemet, J. Molinier, *Finanse publiczne*, PWE, Warszawa 2000, p. 156.

¹⁴ L. Patrzalek, *Finanse samorządu terytorialnego*, Wydawnictwo Akademii Ekonomicznej im. O. Langego we Wrocławiu, Wrocław 2004, p. 67.

¹⁵ *Ibidem*.

¹⁶ N. Gajl, *Modele podatkowe. Podatki lokalne*, Wydawnictwo Sejmowe, Warsaw 1996, p. 24.

and results from political decisions articulated within the current legal order. Furthermore, it depends on economic, geographical, historical and social factors¹⁷. In contemporary democratic countries local self-government units perform a number of functions for the benefit of the citizens living in the area. They are eligible to funds adequate to the level of tasks performed by them. It is essential that the satisfaction of public needs of local communities should be accompanied by a maximum social utility. In this context there is an observation to be made that the division of tax revenues should include not only vertical¹⁸, but also horizontal redistribution¹⁹. J. Ostaszewski, Z. Fedorowicz, T. Kierczyński, explain that “collective living and social needs of local communities are to be met possibly evenly on the national scale, in particular basic needs like education, health, medical care or access to culture”²⁰.

Thus, we are approaching the most important point in the discussed issue: the need to create the optimum division of revenues (in the specific conditions) among different levels of authorities. It may be supported first of all with:

- the increasingly high level of decentralisation of public tasks, the catalogue of tasks of local self-government units is on the increase all the time (tasks commissioned by the government, direct business activity done by local government units),
- costs of public tasks financing,
- the completion of joint tasks by regional and inter-regional unions (the phenomenon of expanding the local economy beyond its administrative boundaries as a result of mergers made by local self-governments with different entities).

It is also important (though not covered by the article) to work out a rational and optimum system of subsidising JST in order to prevent inequalities in the spatial dimension²¹. The appropriate redistribution of revenues made in the primary division is not actually easy and becomes a significant challenge within the financial independence of local self-government bodies.

¹⁷ B. Woźniak, *Zasady funkcjonowania i zakres publicznego systemu finansowego*, in: *System Finansowy w Polsce*, Vol. 2, ed. B. Pietrzak, Z. Polański, B. Woźniak, Wydawnictwo Naukowe PWN, 2nd altered edition, Warszawa 2008, p. 27.

¹⁸ Perceived as optimal, according to the division of tasks, distribution of taxes between state and different local self-government units.

¹⁹ Perceived as taking over surpluses of wealthier local self-government units in order to divide them among units at a lower level of social and economic development.

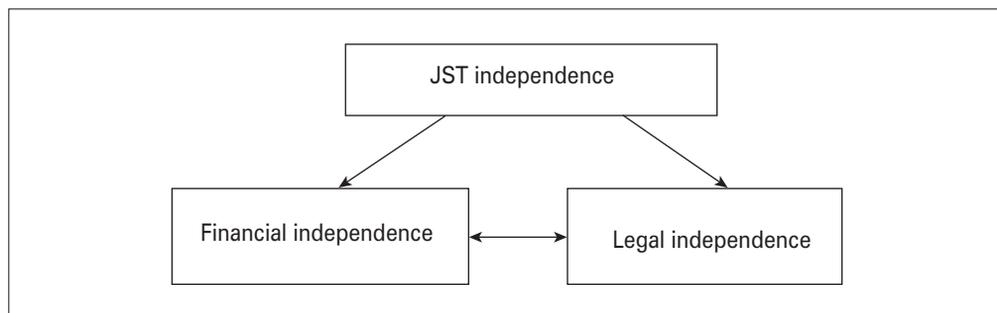
²⁰ J. Ostaszewski, Z. Fedorowicz, T. Kierczyński, *Teoretyczne podstawy reformy podatków w Polsce*, Difin, Warsaw 2004, p. 208.

²¹ See: B. Guziejewska, R. Witczak, *Wokół efektywności finansów samorządu terytorialnego – zagadnienia wybrane*, in: *Współczesne finanse. Stan i perspektywy rozwoju finansów publicznych*, J. Głuchowski (ed.), Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń 2008.

3. The scope of financial independence of local self-governments

The problem of independence in research approach to public finance should be considered on two basic planes: financial and legal (Fig. 1).

Figure 1. Planes of consideration of JST independence



Source: based on B. Filipiak, *Wpływ zmian w podatkach i opłatach lokalnych na samodzielność finansową gminy*, *op. cit.*, p. 242.

The idea of financial independence as the foundation of public authority decentralisation is not a permanent category. As a rule it is assumed that the marginalisation of its scope means an illusory nature of the remaining forms of independence²². Analysing the problem of financial independence, one should consider not only its definite aspects – since it is more of a model case – but also the current legal regulations serving as effective legal guarantees. It cannot be considered, which is stressed by E. Kornberger-Sokołowska, in isolation from the current state system and the system of public finance²³.

Let us examine in the first place the aspects of financial independence of local self-governments. In their publications, authors²⁴ emphasise some types of independence:

- procedural – opportunity to plan and resolve budgets,
- revenue – opportunity to collect and accumulate revenues feeding the local budgets, first of all in the area of taxes within which local self-governments are eligible to a definite scope of tax administrative power,

²² See: e.g. A. Babczuk, *Samodzielność finansowa jednostek samorządu terytorialnego. Pożądane kierunki zmian w świetle badań ankietowych*, in: *Finanse 2009 – Teoria i praktyka. Finanse publiczne II*, B. Filipiak, B. Walczak (ed.), Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 2009, p. 173.

²³ E. Kornberger-Sokołowska, *Dochody jednostek samorządu terytorialnego*, Instytut Studiów Samorządowych, Warsaw 2002, p. 17.

²⁴ E. Chojna-Duch, *Polskie prawo finansowe. Finanse publiczne*, LexisNexis, Warsaw 2003; E. Kornberger-Sokołowska, *Decentralizacja finansów publicznych a samodzielność finansowa jednostek samorządu terytorialnego*, Liber, Warszawa 2001, pp. 38–55; L. Patrzalek, *Finanse...*, *op. cit.*, pp. 66–67.

- spending – the opportunity to independently decide about the distribution of revenues at the disposal of the local self-government community, i.e. actual spending on goals connected with public tasks entrusted to them,
- credit – the opportunity to independently use instruments of financial markets, this activity comes down to financing investment undertakings through incurring debt.

The next step in the theoretical presentation of financial independence – with respect to the problem of the systemisation of planes of consideration of taxes to fund local self-governments budgets – is focusing on essential elements of revenue independence. The complex image (vertical) of revenue independence is reflected by the following phases²⁵:

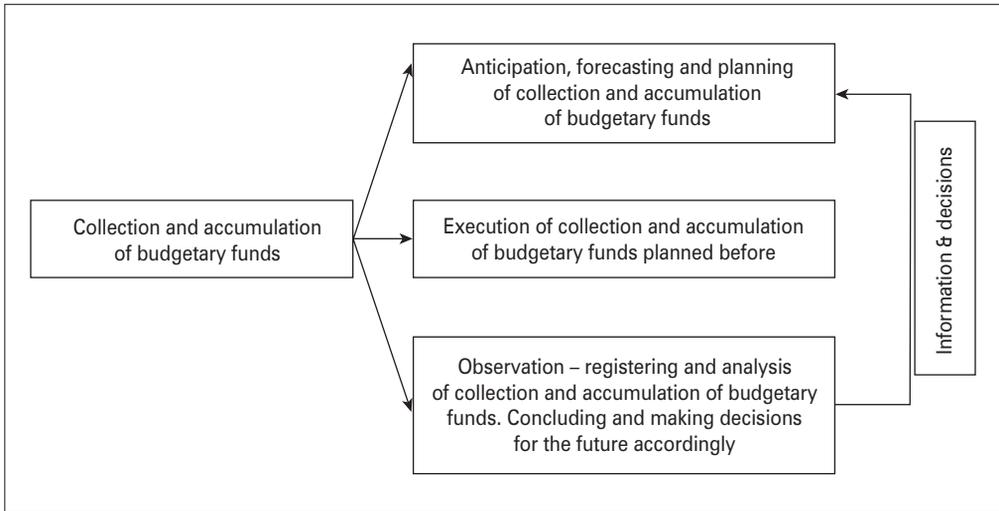
- 1) Level I – Preparation (preceding the movement of public money) within which rules, regulations and tools are determined to serve the collection of public funds and to set schedules of the planned financial revenues;
- 2) Level II – Implementation (real implementation of monetary operations) connected with the actual collection of funds;
- 3) Level III – Register, analysis and conclusions (recording the implemented money operations, their analysis giving rise to the drawing of conclusions) consisting of the verification and control of the effectiveness of the revenue collection process based on registering, analysis, reporting and auditing.

In conclusion, it should be stressed that the basic component to construct the revenue independence of JST budgets is the collection and accumulation of budgetary funds. This parameter is considered in real terms as well as in the remaining two aspects (Fig. 2). The presented concept of the perception of revenue independence of local self-government units from the perspective of “all forms of activity in the area of monetary phenomena”²⁶, enables detailed consideration of the scope of competence of local self-government units in the field of local taxes.

²⁵ The idea of revenue independence like that of *financial independence* has not been defined in legal regulations and in literature in the way beyond any doubt. However, the problem of revenue independence is crucial for local taxation models. In an attempt to enrich the scholarly achievements of public finance and financial law, as a point of reference different levels of financial management were assumed. Read more on financial management in: Z. Fedorowicz, *Podstawy teorii finansów*, Poltext, Warsaw 1991; *Finanse przedsiębiorstwa*, ed. J. Szczepański and L. Szyszko, 3rd edition altered and extended. PWE, Warsaw 2007. Before A. Szewczuk, M. Ziolo used processes in financial management to present the financial management of local self-government units. See: *Zarys ekonomiki sektora publicznego*, Wyd. Uniwersytetu Szczecińskiego, Szczecin 2008, p. 95.

²⁶ A fragment of definition of financial management proposed by Z. Fedorowicz. See: Z. Fedorowicz, *Podstawy teorii finansów, op. cit.*, p. 10.

Figure 2. Broad perspective of “collection and accumulation of budgetary funds” as a basic element of revenue independence



Source: own materials.

The first level of the process of the collection and accumulation of budgetary funds corresponds to an ex ante assessment. The undertaken activities, in the light of legal order²⁷, include in particular: the right to establish local law²⁸ and budget planning.

Certainly, the literature most often focuses on the problem of adjustment of the volume of budget revenues to the tasks within the competence of local self-government units. Let us add that these issues are reflected in legal regulations. According to art. 9 of the European Charter of Local Self-government²⁹, “the volume of financial resources of local communities should be adjusted to the range of administrative power assigned to them by the constitution or act of law”. According to art. 167 of the Constitution of the Republic of Poland: “local self-government units are given the share in public revenues with respect to the assigned tasks, whereas changes in JST tasks and competence occur together

²⁷ Constitution of the Republic of Poland of 2 April 1997; Act of 27 August 2009 on public finance, Journal of Laws No. 157, item 1240 with amendments.

²⁸ According to the content of art.94 of the Constitution of the Republic of Poland. Furthermore in the light of art. 87 section 2 of the Constitution of the Republic of Poland, local acts of law are the source of commonly applicable law in the area of activity of the unit that has established it. The scope of administrative power to establish local law results from laws on self-government of all levels.

²⁹ European Charter of Local Self-government made up in Strasbourg on 15 October 1985, Journal of Laws of 1994, No. 124, item 607.

with the changes in public revenues division". The indicated fragment of the Constitution assumed then both from the statistical and dynamic perspectives the principle of adequacy of public revenues to tasks.

The scope of legislative competences is discussed in a later part of the article; let us only remark here that resolutions concerning taxes are the regulations of the local law. The subject of these resolutions, in the case of property tax may be tax rates, tax exemptions or tax collection.

There are lots of documents created in local self-government units concerning the future both nearest (annual budget) and more distant (long-term financial forecast). The forecasts include the amounts of planned JST revenues, with the isolation of current revenues and property revenues according to their sources. JST budget planning is a complex process, partly created in a bottom-up manner, and partly results from the top-down regulations. In the case of the forecast part of JST budget (anticipation, with determined probability, of future local self-government revenues), it would be well-founded to consider certain characteristics of budget revenues, e.g. efficiency proportionate to the executed tasks, even spatial distribution of the tax base, territorial explicitness, constant spatial relation of the tax base, tax burden universality, simplicity and minimisation of fiscal process costs. The reliable preparation of documents is indispensable; otherwise the chance to strengthen the system of management of public funds management in local self-government units may be limited. Let us emphasise then that the sense of the budgetary planning process should be determined by the quality of forecasts for different time horizons.

The actual implementation of budget revenues is completed, as stated before, at the second level. As the implementation of budget occurs here, the suitable flow of budget funds should be ensured so that the fund managers can carry out spending according to the planned tasks. The prerequisite for the correct performance of the financial sector is the creation of institutions to collect public revenues. In the case of local self-government units, depending on the level of decentralisation of public authority, different solutions may be used.

In Poland these competences are divided between the government treasury administration and local self-government treasury administration. The government treasury administration (tax revenues offices) collects income from income tax from physical persons, income tax from legal persons, makes the division and transfers of the appropriate part to local self-government units. It is also responsible for the collection and transfer of tax revenues to local authorities: tax on gifts and inheritance, stamp duty, lump sum personal income tax in the form of a tax card. While tax collection commonly referred to as self-government taxes (real estate, agricultural, forestry, transport vehicles taxes) are dealt with by local tax

bodies³⁰. Considering individual groups of income taxes, one can say that they come to local budgets directly or indirectly (through tax revenue offices).

The third level of collection and accumulation of budgetary funds requires the mid-term and ex-post perspectives. Activities at this level are undertaken not only in the course of implementation of the indicated actions but also after their completion. The management of monetary resources of local self-governments is subject to definite permanent or interim procedures. They include: monitoring, budget reporting as well as internal and external audit. The activities within the third level are to eliminate negative phenomena, make evaluation of the revenue independence and achieve a higher effectiveness of public fund collection in future periods.

In conclusion, a complete definition of the concept of *JST financial independence* is to be regarded as an extremely difficult task. Every attempt in the area, as the abundant literature shows, is incomplete. It can be assumed, however, that for considering the issue of local taxes, the revenue independence of local self-government units should be manifested in sufficient funds to be able to act independently in the area determined by legal regulations.

4. Problems of legal regulations on local self-government revenues

The factor determining the degree of financial independence is, as mentioned above, a legal area. Discussions on JST independence in the legal terms focus on different aspects of the problem. However, the most frequent subjects are:

- legal order, according to which a local self-government unit has been given the status of a legal entity, which means its independence and decisions on its own affairs³¹,
- legal regulations included in the Constitution of the Republic of Poland, the European Charter of Local Self-government, in common legal acts concerning the rights of subjective local self-government units with regard to their financial management³²,
- determination of JST empowerments and limitations of collection and management of public funds³³,

³⁰ These are district (*gmina*) urban self-government offices, and decisions in individual cases are made by a district mayor (*wójt*) (The town mayor or president).

³¹ M. Dylewski, B. Filipiak, M. Gorzałczyńska-Koczkodaj, *Finanse samorządowe...*, *op. cit.*, p. 13.

³² E. Kornberger-Sokołowska, *Dochody jednostek...*, *op. cit.*, p. 14.

³³ A. Szewczuk, *Wartościowanie działalności samorządu terytorialnego – aktywna orientacja badawcza w finansach publicznych*, in: *Dylematy i wyzwania finansów publicznych*, T. Juj (ed.), Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2010, p. 201.

- normative standards concerning JST revenue source model (standards based on constitution, international law and ordinary legislation)³⁴,
- analyses and assessments to make sure that current legal regulations create suitable conditions for the financial independence of local self-government units³⁵.

In an attempt to answer the question of what should the scope of the legislation in the activity of local self-governments be, it is worthwhile referring to the statement made by A. Szewczuk, who claims that “independence cannot be referred to legislation, but to the detailed application of law while undertaking and implementing legal acts in the area of budgetary issues”³⁶. A similar view is presented by S. Owsiak, who stated that “tax, as a complex economic, social and political category is a very sensitive instrument in the hand of public authorities. This fact determines the scope of autonomy (tax administrative power) of self-government bodies. This autonomy must be very much limited, what is more even this narrow area has to be hedged with strict discipline determined by the state laws”³⁷.

A. Szewczuk’s and S. Owsiak’s cited views induce a question on whether or not the thesis that local self-government units should have the right to establish local legal acts, which would not mean a simple projection of top-down assumptions of central authorities. There is another question in this context: how big the scope of legislative empowerment for local self-government units with regard to local taxes is possible and what social and economic effects it could give rise to. It should be underlined that in Poland the basic difficulty in increasing JST independence is the scope and reach of disproportions in the distribution of the tax base within the relations among district (*gmina* – the lowest level) self-governments.

First of all, it does not seem to be the best idea to grant rights to introduce solutions in a different shape from the statutory because radical legislative liberalism could prove harmful resulting in undesired phenomena, even those disturbing the work of self-government. Thus, it is pointless to object to the view expressed by the science of tax law that regulations on the imposition of taxes and other public duties should be included in the parliamentary acts³⁸.

³⁴ Z. Ofiarski, Normatywny model źródeł dochodów jednostek samorządu terytorialnego a ograniczenia wynikające z sytuacji sektora finansów publicznych w Polsce, in: Dylematy i wyzwania finansów publicznych, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2010, p. 211.

³⁵ L. Jędrzejewski, Samodzielność finansowa jednostek samorządu terytorialnego w świetle regulacji prawnych, in: Finanse, Bankowość i Ubezpieczenia wobec wyzwań współczesności, Vol. II, ed. K. Znanięcka, Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2002, p. 526.

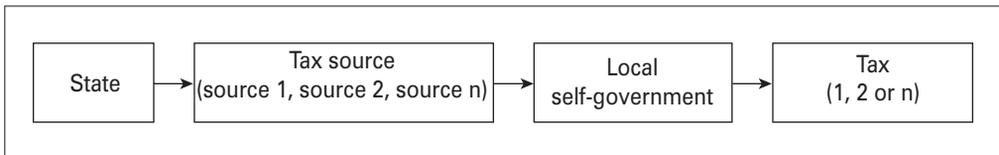
³⁶ A. Szewczuk, Wartościowanie działalności samorządu terytorialnego..., *op. cit.*

³⁷ S. Owsiak, Finanse publiczne. Teoria i praktyka, *op. cit.*, p. 112.

³⁸ The Polish legislator confirmed this in art. 217 of the Constitution of the Republic of Poland.

Attempting to determine the desired trends in local self-government financial changes in Poland in legal terms, one can consider the possibility of making a choice by the local self-government of the variant from among those determined by the legislator (Fig. 3).

Figure 3. Scope of legal independence of local self-government



Source: own material.

Fig. 3 illustrates a solution possible to accept within the area of the legal independence of local self-government. In this situation the legislative activity of local self-government would consist of choosing a definite tax solution within the tax sources indicated formerly by the national legislator. For example, in the case of real estate belonging to the local self-government units, they can decide independently about the establishment of tax (taxes) envisaged in the law on developed premises (housing, non-housing, business or non-business), on undeveloped real estate (arable land, forests, remaining).

The proposed solutions would enable, to a certain extent, the adjustment of the system of funding the district (*gmina*) to the specific nature of the local tax base. Let us underline though that in the case of this solution, it is not sufficient to believe that the local self-government is driven by clear and rational reasons (bearing in mind the principles of justice and the equality of taxation). Following these principles requires strict regulations and a system of control.

Naturally, local legal acts are normative acts of lower standing (of a basic character), but independent decisions made by local self-government bodies on the establishment of a definite solution envisaged in the law will enrich the scope of independence of local self-government. A significant scope of legal independence may affect the sense of responsibility for the economic situation of the self-government commonwealth, thus it favours financial independence.

5. Selected aspects of the decentralisation of tax administrative power

Making use of the idea of tax administrative power, one should point not only to its ambiguity, but also to the lack of explicit approach to the definition itself. I think

the definition put forward by E. Kornberger-Sokołowska corresponds well to the problems connected with the decentralisation of tax. Let us assume then, to follow the cited author, that the tax administrative power means a legally determined scope of administrative power to make decisions in the area of taxes, i.e. the construction of the particular elements of tax, the shape of the content of duty relationship (the tax administration or the issuing of individual decisions concerning redemption, instalment restructuring, the collection of tax and its execution)³⁹.

The tax activity of local authorities causes a number of consequences, both in economic, social and political terms. Local self-government units using different tools of local tax policy affect the activity of business entities. The scope of this empowerment is important.

Theoretically, the following results of the delegation of tax administrative power to local authorities should be emphasised⁴⁰:

- vertical imbalance – resulting from the fact that central authorities can collect taxes more effectively than local self-government units, and own revenues transferred to self-governments are inadequate in relation to the tasks imposed on them,
- horizontal imbalance – caused by the fact that the potential basis on which taxes can be imposed is completely different in particular areas of operation of local authorities. A specific role is attributed to the so called horizontal fiscal external factors, i.e. the phenomenon of tax export and tax competition.
 - 1) Tax export takes effect in the situation when taxes imposed by a definite local self-government unit burden the entities operating outside the area of operation of this unit⁴¹. The advantage of this form will be the opportunity to cover costs connected with services rendered by JST, while the disadvantage is tax burden incurred by entities not connected with the given self-government unit; discrepancies between social costs and private costs connected with local public spending.
 - 2) Tax competition occurs when the tax solutions adopted by one local self-government unit affect the tax system of another self-government unit⁴². The advantage of this form is the discipline of self-

³⁹ E. Kornberger-Sokołowska, *Decentralizacja finansów publicznych...*, *op. cit.*, p. 83.

⁴⁰ B. P. Herber, *Modern Public Finance*, Richard D. Irwin INC, Illinois 1979, p. 329, see: B. Guziejewska, *Wybrane aspekty decentralizacji władztwa podatkowego*, in: *O nowy ład podatkowy w Polsce*, redaktor naukowy J. Ostaszewski, Oficyna Wydawnicza Szkoły Głównej Handlowej w Warszawie, Warsaw 2007, p. 204.

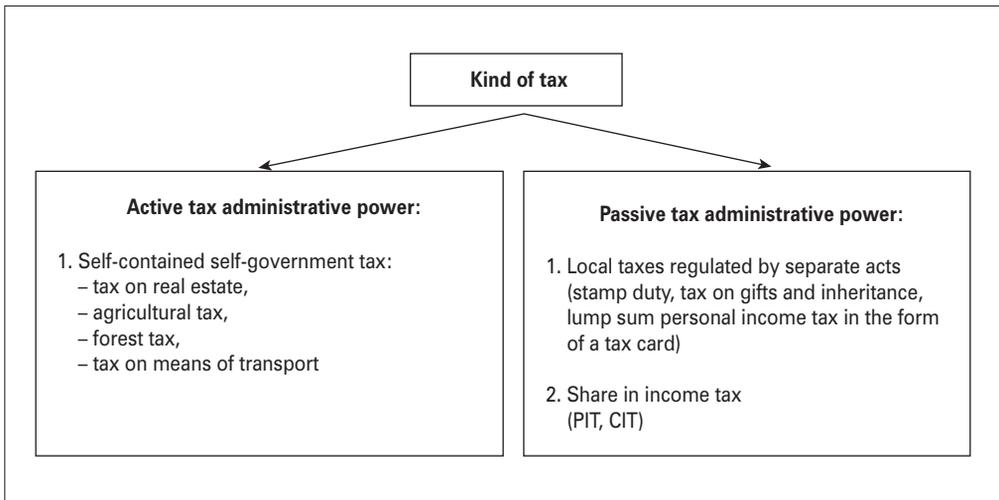
⁴¹ The problem is clearly visible especially in the case of delegating the right to impose indirect taxes to JST, e.g. excise tax.

⁴² It does not remain without any impact on the decisions taken by entrepreneurs with regard to the business location, i.e. the choice of the local self-government unit in the area of which taxes are lower.

government performance⁴³; the disadvantage is the imitation within tax implementation⁴⁴, lowering of spending⁴⁵ and distortions in resource allocation⁴⁶.

At present in Poland tax operations being the source of budget revenue of local self-government units are connected with a diversified scope of tax administrative power⁴⁷ (Fig. 4).

Figure 4. Division of taxes which fund district (*gmina*) budgets with respect to their tax administrative power



Source: own material.

⁴³ Protection of citizens against the excessive greed of politicians and officials.

⁴⁴ Unfavourable tax solutions adopted by the authorities raise the probability of actions aimed at tax evasion.

⁴⁵ Uncontrolled lowering of tax rates considerably cuts self-government revenues. It may result in the reduction of local self-government spending.

⁴⁶ Consumers, trying to avoid paying high taxes imposed on some goods, take actions aimed at finding other goods to replace them.

⁴⁷ The proposal of two kinds of tax administrative power refers to the concept of gradualness of local budgets independence (see: A. Walasik, Teoretyczne zagadnienia decentralizacji decyzji w zakresie polityki podatkowej, Samorząd Terytorialny, No. 1-2, 1998 pp. 40-45). Active tax administrative power includes: the right to make corrections (narrowing of widening) of tax technical elements (the so called limited legislative freedom) and the right to make decisions in the area of tax technical dimension (the so called full legislative freedom). On the other hand, passive administrative power means only the right to take over revenues achieved on account of the exploitation of tax sources existing in the area of local self-governments. There are also suggestions as to distinguishing the following ranges: wide range of tax administrative power (full power), narrow range of tax administrative power (limited power) and passive power (see: W. Grześkiewicz, Znaczenie podatków w finansowaniu rozwoju lokalnego, Samorząd Terytorialny No. 3, 2004).

Let us then diagnose the competence of self-government authorities as to making use of the instruments of tax policy. In this connection it is really necessary to explain the accepted scope of the notion *tax administrative power*. Standards defined in the European Charter of Local Self-government are to serve as a reference point. The document, which is the source of legislative standards for the system of local self-government, determines a minimum standard of self-government tax administrative power. In art. 9 sec. 3 the legislator decides that “at least part of the financial resources of the local community should come from local taxes and charges, whose rates these communities have the right to establish within the scope determined by the law”. The tax empowerment means that taxes only partially depend on the decision of local self-government representatives. They must comply with the statutory regulations.

The literature describes this scope of administrative power as *partial administrative power*⁴⁸. Local self-government units have really acquired the right to make resolutions on certain taxes, yet only within the confines of law. This empowerment is seriously limited as it deals with:

- taxes, which are not considered significant from the fiscal point of view (e.g. agricultural tax, forest tax in urban districts or tax on means of transport),
- turnover taxes, which are far less important for entrepreneurs than income taxes,
- lowering tax dues (the determination of basic rates with consideration to maximum statutory rates, granting tax breaks and reliefs besides those determined statutorily, making use of the institutions of postponement or remission).

Apparently, making use of the aforementioned tools results in changes in level of funds possessed by the JST. From the present perspective it means slimmer incomes to the self-government budget. In the long run, however, the direction of changes in monetary resources does not have to be explicitly determined. Admittedly, it may be assumed that self-government authorities, while creating favourable conditions for the local entrepreneurs (acceptance of temporary reduction in tax revenues), await the compensation for this “loss” through increased revenues in the future.

The effectiveness of the tools of local interventionism is dependent to a large extent on the correct assessment of the present social and economic situation (the determination of the tax base to be built by the local self-government) and its future possibilities (the quality of economic forecast). The prediction of how

⁴⁸ B. Guziejewska, Wybrane aspekty decentralizacji władztwa podatkowego, *op. cit.*, p. 210.

much the local self-government may benefit from the growth in their area is burdened with a high level of uncertainty. It results for instance from the passive administrative power in the case of the share in the state taxes. Despite the undisputable fact that the sources of these revenues are in the area of activity of the local self-government, I think that, the impact of JST on the productivity of income taxes should be approached very carefully. It seems that the above assumption may be justified as follows:

- local authorities have no impact on the construction of income taxes,
- local authorities have no impact on their share in these taxes,
- the construction of income taxes are subject to frequent changes,
- there are changes in setting the way and volume of shares.

6. Conclusions

In Poland the current solution ensures a certain scope of tax administrative power with regard to the definite group of taxes, with a simultaneous determination of rules by the state in relation to level the most significant taxes (indirect solution). According to some economists (L. Patrzałek⁴⁹, J. Marczakowska-Proczka⁵⁰), this solution is correct. The scope of JST tax administrative power is disputable according to the cited authors (i.e. details of particular tax constructive elements which may be shaped by the authorities of local self-government units). Let us remark that in individual countries, depending on the forms⁵¹, the scope of tax administrative power is different.

I think that local self-government should be equipped with such a scope of tax administrative power as to be able to shape a rational tax policy. When deliberating over the issues of local self-governments' own tax policy, it must be stated that:

- there is no need to undermine the systemic principle of limiting the number of entities empowered to impose the tax law norms, the postulate of law making by legislative authorities in the form of a legal act of parliamentary standing should remain valid,

⁴⁹ L. Patrzałek, *Finanse samorządu terytorialnego*, *op. cit.*, p. 67.

⁵⁰ J. Marczakowska-Proczka, *Podatki samorządowe i udziały w podatkach państwowych w strukturze dochodów własnych gmin w Polsce w latach 2000–2005*, in: *O nowy ład podatkowy w Polsce*, *op. cit.*, p. 501.

⁵¹ In federal countries there is a division into states or their equivalents, in regional countries (with constitutional principles of regional autonomy) into regions. In unitary countries there are no divisions of this sort. Thus, in federal and regional countries there is a state level: in between the central and local levels.

- undertaking brave changes within the system of revenues of local self-government units will be determined by the general situation of public finance (in particular the situation of the state budget),
- the diversity of spatial needs in relation to disposable funds justifies the necessity of levelling disproportions (demographic, economic, cultural, natural and social) between individual local units,
- subjective determinants should become less significant, not satisfying the self-government community, the level of decentralisation of public finance (generally it has to do with the stereotype repeated for many years about the lack of experience of workers and the insufficient technical equipment of local administration),
- the division of the sources of tax revenues between the state budget and JST budgets should come as a result of a real compromise in consideration of not only the economic reality but also strategic goals implemented by central authorities (e.g. establishing law, internal and external security, social security, business turnover security, the judiciary or organisation of money circulation) and local self-government (satisfying the needs of the local community in the area of public utility, local growth stimulation, and, due to it also, social and economic growth of the region and the whole country), local community expectations (pragmatic management of self-government finances, i.e. using appropriate procedures and methods to make decisions resulting in the fair and rational spending of public funds),
- local self-governments should have the possibility of active tax policy, supporting the local growth (business activity growth, fight with unemployment, development of infrastructure, environment protection etc.). The tools to affect the local economic area are local tax rates, tax reliefs and breaks,
- the opportunity to implement tax administrative power should concern all units of local self-government, i.e. not only districts (*gmina* – the smallest) but also *poviats* and *voivodeships* (larger areas)⁵².

The indicated problems concerning the economic role and significance of local self-government confirm that there is a visible need to finish the streamlining process and what is important to stabilise regulations in this area. The work that has been done for a long time on the introduction of the new cadastral tax is not enough in my opinion. In real terms, the problem is complex; the multidimensional

⁵² At present, *poviats* and *voivodeships* are not equipped with their own tax sources. Share in income tax revenues are of a different nature.

research must deal with local tax, para-transfer revenues (share in state taxes) and transfers on account of subsidies or subventions.

The problem of the tax administrative power of local self-government bodies should be considered in a complex way from different perspectives. Admittedly, within the systems of contemporary democratic countries, self-government taxes and the tax administrative power connected with them are socially accepted. Thus, the model (system) of JST tax revenues in Poland should be worked out.

It is worth mentioning that the decentralisation of public authority cannot come down exclusively to the problems connected with tax system reform. The extension of JST tax administrative power should be treated as the foundation of local self-government units' financial stability. With respect to taxes funding self-government budgets, it would be desirable to explicitly determine the elements making up tax administrative power, to diagnose, at least the most important, consequences of the decentralisation of tax administrative power defined in this way and to construct an appropriate methodology to enable their valuation.

The suggested growth in significance of local self-government units as the subject of tax policy does not mean that they would become financially self-sufficient, i.e. they would be able to cover all planned expenditure from their own incomes without any external help. Currently, there is no division of public revenues in the vertical section as a result of which own revenues would become a universal, entirely exclusive and fully sufficient source of financing tasks by local self-government⁵³.

Bibliography

- Babczuk A., *Samodzielność finansowa jednostek samorządu terytorialnego. Pożądane kierunki zmian w świetle badań ankietowych*, in: *Finanse 2009 – Teoria i praktyka. Finanse publiczne II*, B. Filipiak, B. Walczak (ed.), Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 2009.
- Begg I., *Finansowanie Unii Europejskiej*, *Nowa Europa*, No. 1 (3), 2006.
- Chojna-Duch E., *Polskie prawo finansowe. Finanse publiczne*, LexisNexis, Warsaw 2003.
- Denek E., *Podatki w gospodarce samorządu terytorialnego w warunkach integracji europejskiej*, in: *Finanse*, B. Pietrzak (ed.), Oficyna Wydawnicza Szkoły Głównej Handlowej w Warszawie, Warsaw 2005.
- Dylewski M., Filipiak B., Gorzałczyńska-Koczkodaj M., *Finanse samorządowe. Narzędzia, decyzje, procesy*, Wydawnictwo Naukowe PWN, Warsaw 2006.

⁵³ J. Ostaszewski, Z. Fedorowicz, T. Kierczyński, *Teoretyczne podstawy reformy podatków w Polsce*, *op. cit.*, p. 204.

- Fedorowicz Z., *Podstawy teorii finansów*, Poltext, Warszawa 1991.
- Filipiak B., Wpływ zmian w podatkach i opłatach lokalnych na samodzielność finansową gminy, in: *Polski system podatkowy. Założenia a praktyka*, A. Pomorska (ed.), Wydawnictwo UMCS, Lublin 2004.
- Finanse przedsiębiorstwa*, J. Szczepański and L. Szyszko (ed.), 3rd extended edition, PWE, Warsaw 2007.
- Gajl N., *Modele podatkowe. Podatki lokalne*, Wydawnictwo Sejmowe, Warsaw 1996.
- Gaudemet P. M., Molinie J., *Finanse publiczne*, PWE, Warsaw 2000.
- Grzeškiewicz W., Znaczenie podatków w finansowniu rozwoju lokalnego, *Samorząd Terytorialny* No. 3, 2004.
- Guziejewska B., Wybrane aspekty decentralizacji władztwa podatkowego, in: *O nowy ład podatkowy w Polsce*, J. Ostaszewski (ed.), Oficyna Wydawnicza Szkoły Głównej Handlowej w Warszawie, Warsaw 2007.
- Guziejewska B., Witczak R., Wokół efektywności finansów samorządu terytorialnego – zagadnienia wybrane, in: *Współczesne finanse. Stan i perspektywy rozwoju finansów publicznych*, J. Głuchowski (ed.), Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Toruń 2008.
- Herber B. P., *Modern Public Finance*, Richard D. Irwin INC, Illinois 1979.
- Jędrzejewski L., Samodzielność finansowa jednostek samorządu terytorialnego w świetle regulacji prawnych, in: *Finanse, Bankowość i Ubezpieczenia wobec wyzwań współczesności*, Vol. II, K. Znaniecka (ed.), Wydawnictwo Akademii Ekonomicznej w Katowicach, Katowice 2002.
- Kornberger-Sokołowska E., *Decentralizacja finansów publicznych a samodzielność finansowa jednostek samorządu terytorialnego*, Liber, Warsaw 2001.
- Kornberger-Sokołowska E., *Dochody jednostek samorządu terytorialnego*, Instytut Studiów Samorządowych, Warsaw 2002.
- Kornberger-Sokołowska E., Budżet państwa a budżety jednostek samorządu terytorialnego, in: *Stan i kierunki rozwoju finansów samorządu terytorialnego*, L. Patrzalek (ed.), Wydawnictwo WSB w Poznaniu, Poznań, 2007.
- Kozuń-Cieślak G., Decentralizacja władzy i zasady delegowania kompetencji – podejście teoretyczne, in: *Finanse 2009 – Teoria i praktyka. Finanse Publiczne I*, Wydawnictwo Naukowe Uniwersytetu Szczecińskiego, Szczecin 2009.
- Marczakowska-Proczka J., Podatki samorządowe i udziały w podatkach państwowych w strukturze dochodów własnych gmin w Polsce w latach 2000-2005, in: *O nowy ład podatkowy w Polsce*, J. Ostaszewski (ed.), Oficyna Wydawnicza Szkoły Głównej Handlowej w Warszawie, Warsaw 2007.
- Oates W., *The Effects of Property Taxes and Local Public Spending on Property Value: An Empirical Study of Tax Capitalization and Tiebout Hypothesis*, „*Journal of Political Economy*”, 1972, No. 77.
- Ofiarski Z., Normatywny model źródeł dochodów jednostek samorządu terytorialnego a ograniczenia wynikające z sytuacji sektora finansów publicznych w Polsce,

- in: Dylematy i wyzwania finansów publicznych, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2010.
- Ostaszewski J., Fedorowicz Z., Kierczyński T., Teoretyczne podstawy reformy podatków w Polsce, Difin, Warsaw 2004.
- Owsiak S., Finanse publiczne. Teoria i praktyka, Wydawnictwo Naukowe PWN, Warsaw 1998.
- Patrzalek L., Finanse samorządu terytorialnego, Wydawnictwo Akademii Ekonomicznej im. O. Langego we Wrocławiu, Wrocław 2004.
- Prod'homme R., Fiscal Decentralization and Inter-governmental Fiscal Relations, A summary report prepared for the UNCDF symposium on Decentralization Local Governance Africa, 2001.
- Stigler G., The Tenable Range of Functions of Local self-government, in: Federal Expenditures Policy for Economic Growth and Stability. Ed. Joint Economic Committee, Subcommittee on Fiscal Policy, U.S. Congress, Washington, DC; U.S. Government Printing Office, 1957.
- Szewczyk A., Finanse polskich gmin w świetle Europejskiej Karty Samorządu Terytorialnego, in: Finanse, Banki i Ubezpieczenia w Polsce u progu XXI wieku, Vol. I – Finanse publiczne, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań 2000.
- Szewczuk A., Ziolo M., Zarys ekonomiki sektora publicznego, Wyd. Uniwersytetu Szczecińskiego, Szczecin 2008.
- Szewczuk A., Wartościowanie działalności samorządu terytorialnego – aktywna orientacja badawcza w finansach publicznych, in: Dylematy i wyzwania finansów publicznych, redaktor naukowy T. Juja, Wydawnictwo Uniwersytetu Ekonomicznego w Poznaniu, Poznań 2010.
- Tiebout C., A Pure Theory of Local Expenditures, „Journal of Political Economy”, 1956, No. 64 (5).
- Walasik A., Teoretyczne zagadnienia decentralizacji decyzji w zakresie polityki podatkowej, Samorząd Terytorialny, No. 1–2, 1998.
- Woźniak B., Zasady funkcjonowania i zakres publicznego systemu finansowego, in: System Finansowy w Polsce, Vol. 2, B. Pietrzak, Z. Polański, B. Woźniak (ed.), Wydawnictwo Naukowe PWN, 2nd altered edition, Warsaw 2008.
- European Charter of Local Self-government made up in Strasbourg on 15 October 1985, Journal of Laws of 1994, No. 124, item 607.
- Constitution of the Republic of Poland of 2 April 1997.
- Act of 27 August 2009 on public finance, Journal of Laws No. 157, item 1240 with later amendments.

Rafał Mrówka
Collegium of Management and Finance
Warsaw School of Economics

Hyperarchy as a New Model of Organisation

1. Introduction

The environment of modern organisations evolves all the time. In the course of years these changes have been increasingly fast and deep and they often redefine the way the organisations operate and enforce the application of new business and economic models (Kołodko, 2008; Mączyńska, 2009; Szymański, 2001). The area that seems to initiate many other changes in recent years has been in the first place technology, which significantly affects socio-cultural trends which in turn affect the economy as well as political issues. It is the technology that gave rise to the dynamic growth and the creation of the new sense of social networks – the notion to affect all areas of activity in the modern world (Castells, 2010).

In this situation it is not surprising that these changes have a far reaching effect on the models of operation of organisation and the shape of their organisational structure (Hopej, Kamiński, 2010; Walas-Trębacz, Tyrańska, Stabryła, 2009). The possibilities created by technology and social changes may become a starting point for the new organisational models providing organisations with new ways of competition on the market. This study focuses on the appearance of a new model of hyperarchical organisation based on the use of creative potential network of units communicating with one another by means of modern technology.

2. Evolution of organisational models – from hierarchy to network

The idea of an organisational model is connected with the schematic presentation of the way the organisation operates. The model includes major elements shaping the organisation, including (depending on the approach) people (also management), technologies, goals and tasks (also strategy), value (culture) and the organisational structure. Some studies confine the model of organisation down to the model of its structure (Encyclopaedia of Organisation and Management, 1982), however, in every case the organisational structure and its model are at least one of the key elements of the model of organisation (approaches represented by Leavitt,

Krzyżanowski, Bielski, McKinsey – see: Krzyżanowski, 1999). In this paper the author focuses mainly on the analysis of the model of organisational structure, but he also considers its impact on other elements of the organisational model, including in particular the strategy of organisation.

The significance of organisational structure and its connection with the strategy of organisation has been the subject of scholarly disputes since the beginning of the development of management sciences, i.e. for over 100 years. For many years scientists have argued if the organisational structure should be subordinated to the strategy (the stance represented by e.g. Chandler, 1962), or whether it should be the other way round and the strategy should be subordinated to the organisational structure (e.g. Mintzberg, 1990; Ansoff, 1985). There is also a third approach pointing to a crucial impact of the environment on the choice of both strategy and structure of organisation (Child, 1972; Aldrich, 1979; Hrebiniak, Joyce, 1985).

The author does not aim at settling the dispute. However, it results from all the studies that there is a strong relation between the strategy, structure and environment of the organisation. It must be remarked that the dynamic changes in the environment of modern organisations should also mean changes in the models of the organisation operation. The phenomenon is particularly evident on the example of the significance of hierarchy in contemporary organisations. Traditional business organisations, most of those that achieved success in the 20th century are based on different use of hierarchy (Walas-Trębacz, Tyrańska, Stabryła, 2009). In the models used by them there are different levels of organisation, precisely determined interdependences and official subordination (Kotarbiński, 1973). Certainly, the structure of such organisations may be more slim or flat, more or less centralised, or dispersed, but anyway it is based on the superiority of some selected units within the organisation over others. The reasons why these models were used were of course quite rational and justified. They include:

- different level of competence at different levels of organisation resulting from education and also gained experience,
- difficulty with access to information, and what follows asymmetry in the access to it on the part of different groups within the organisation,
- in this connection more difficult communication inside the organisation and easier access of some entities to the instruments and channels of communication,
- necessity of quick decision making supported by clear definitions of responsibilities resulting from the organisational hierarchy.

Admittedly, as early as in the middle of the 20th century there were gradual changes connected with the lower significance of hierarchy, gradual

decentralisation and moving towards the organic model of organisation (Burns, Stalker, 1961; Lawrence, Lorsch, 1967; Mintzberg, 1979). It did not change the fact, however, that the hierarchical model was still dominating, the scale of the impact of hierarchy being slightly limited.

In the 1980s and 90s other models of organisation began to appear: first network organisation, then virtual organisation. Network organisation is a “long term profit oriented community of separate organisations, which, thanks to it, gain the competitive advantage on the market” (Jarillo, 1988: 32). Network organisations are well adjusted to the instability of environment and solve problems that cannot be solved exclusively by experts scattered inside the organisational hierarchy (Van Alstyne, 1997; Łobejko, 2010).

On the other hand, the definition of virtual organisation has given rise to a lot of difficulties up to now. Many theoreticians and practitioners use this term in a different context. The basic dilemmas include the following issues:

- the scope of approach to the comprehension of virtual organisation – the broadest one is based on the consideration of every form of cooperation without a formal organisational structure as virtual organisation (Davidov, Malone, 1992). However, most definitions mention the network of partners implementing a common goal, based on the use of unique crucial competences of individual entities making up the network,
- the kind of formal relations between cooperating entities – there are approaches here which refer to both cooperation within the same formal and legal organisation (Scholz, 1996), and those within the network going beyond one organisation (e.g. Sankowska, Wańtuchowicz, 2007; Byrne, 1993). The latter approach seems to be decisively more common,
- the kind of entities cooperating within the network – some definitions mention the cooperation of organisations (e.g. Zimniewicz, 1999; Byrne, 1993; Sankowska, Wańtuchowicz, 2007), other definitions: the cooperation of certain organisational units (Bleicher, viz. Gach, Nowak, 1997) and others: openly mention the possible involvement of private individuals (Travica viz. Kasper-Fuehrer, Ashkanasy, 2003). Najda-Janoszka claims (2010: 80) that “the participants of a cooperating network may be not only a company or research unit but also individuals, experts and specialists. Competence, which becomes the source of dominance, is crucial. The dominance, which is time variable and depending also on the competence of other people making up the community, is relative.” It seems that every approach in the area of choice of entities making up the virtual network is possible,
- different comprehension of the very idea of virtuality – it may be understood as virtual communication, i.e. communication using modern technologies

like the Internet or telephone (in a sense it is to be seen in Perechuda, 1997) or as dynamism or instability of relations (Sankowska, Wańtuchowicz, 2007; Hopej, Kamiński, 2010). The latter way of understanding seems to be dominating in definitions of virtual organisation, although many definitions explicitly emphasise the importance of information technology. (Hopej, Kamiński, 2010; Byrne, 1993),

- the way of organisation of the virtual network itself – some definitions do not specify the issue at all, but some others point to definite models, e.g. value chain (Zimmiewicz, 1999) or network integrated around one element (Hopej, Kamiński, 2010). It seems, however, that virtual organisations may create different models, which will be analysed later in this chapter.

Warner and Winzel (2005: 14) summing up many concepts point to the following features of virtual organisation:

- limited importance of material assets and structure,
- based on communication technologies and use of remote,
- hybrid organisation form based on short and long term cooperation,
- fuzziness of organisations limits,
- flexibility of operation.

It seems that the importance of information technology for virtual organisation is an element that appears in nearly all studies devoted to this topic. It is also not accidental that this concept of organisation was not born until the technical possibilities were created to facilitate dynamic communication within the network.

Within the model of virtual organisation some sub-types may be distinguished: (see: Khan, Azmi, 2005):

- consortium model – every partner contributes similar amounts of resources, skills and knowledge. Compatible goals and values of partners and mutual trust are necessary. Partners most often come from quite different seemingly unconnected sectors (e.g. cooperation of Microsoft with Lego). This model is also used to divide risk between partners (e.g. IBM, Sun and HP working together on the Java language),
- atom model – the main organisation maintains contact with satellite organisations. The leader organisation manages knowledge, resources and contacts within the network. It often refers to organisations operating on different geographical markets, e.g. Pliva,
- value chain model – one organisation provides the end user with value, cooperating on the way with many organisations making up a certain value chain of more permanent or variable nature, e.g. Benetton or Wal-Mart.

- e-shop model – organisations coordinate marketing, sales and distribution of different products within an internet shop. Technology has a crucial bonding effect, e.g. Amazon.com or Allegro.

3. Hyperarchical organisation

The concept of hyperarchical organisation seems to be a consequence and an extension of the virtual organisation model due to the appearance of new technological possibilities connected with the growing significance of communication networks. There are some analogies in this concept with virtual organisation. The idea of hyperarchy was first used in 1997 by Philip Evans and Thomas Wurster in the *Harvard Business Review* (1997). Evans and Wurster define hyperarchy as a “large scale, self-organising community of high level of energy and involvement despite the lack of clear direct remuneration for the participants”. The phrase was coined by the analogy to WWW hyperlinks. WWW is a hyperarchy, in which every user can freely move from one link to another. There are no limitations in this area. The hyperarchy ensures free access, freedom and flexibility. It gives the possibility of fluent team based interdisciplinary cooperation, where people are not limited with stiff barriers and levels of hierarchy. Thanks to it, it is easy to exchange information. There is a phenomenon of information creation; Łobejko (2010) says “open innovations become a new network source of competitive advantage. (...) The process of creation and development of innovation from the one closed inside the company becomes open to outside partners”.

The appearance of hyperarchy was possible thanks to the advancement of information technologies and global network facilitating the creation of communication models of global scope.

Three most important features of hyperarchical organisation are:

- 1) information symmetry: every member of a hyperarchical organisation has full access to all information used at work. Hierarchy cannot be developed, based on the preferential treatment of some individuals in the area of information and gaining power position in this way. It is thanks to this information symmetry that every member of such an organisation is able to fully use their unique potential and contribute to the increase in innovativeness of the undertaken actions. This symmetry is possible exactly thanks to the information technology that guarantees everybody the access to all the resources on equal rights;
- 2) peer-to-peer communication: the condition to achieve information symmetry is to provide every member of the organisation with equal

unlimited communication possibilities with any other community member. This is also possible thanks to information instruments and network connecting the members of the organisation;

- 3) real time of activity: all information related to undertaken actions also thanks to information technology reaches all the cooperating people at the same time. This is also a condition of maintaining information symmetry. The time of access to information cannot be a source of gaining advantage and power in such a community.

These features distinguish this concept also from the aforementioned virtual organisation, for which they were not existence prerequisites. It is worth remarking here that the presented three fundamental features of hyperarchical organisation are the exact opposite of the assumptions behind hierarchical organisation creation. Symmetry replaces asymmetry, peer-to-peer communication in real time replaces difficulties with access to information.

Thanks to the full access to information on the part of all individuals in real time, every member of a hyperarchical structure can make immediate decisions that translate into effects recognised by others have an impact on the activities of other individuals or groups. The possession of the information itself cannot be a source of power and control, there is more and more importance of knowledge, skills and qualifications of individuals not their formal positions; no formal structure is stronger than an individual. It is the knowledge and competence that can be the element to concentrate the activities of the structure in a defined time and the cause of self-organisation mentioned Evans and Wurster. According to Weber (2004: 64), in reality, in particular in larger projects there may appear a quasi-hierarchical structure with appointed people responsible for minor sub-projects, where decisions are made by leaders at an appropriate level, appointed mainly on the basis of the acquired knowledge of the project. A certain meritocratic structure is being created. However, Khan and Azmi (2005) claim that a stiff central authority is out of the question. Within a hyperarchy a bureaucratic structure is replaced by a trust based network in which members share knowledge and exchange opinions.

In the definition of hyperarchy by Evans and Wurster there is one more extremely important element. They point to the involvement of the community members even if there is no “clear and immediate gratification”. With no external motivators, the source of motivation must come from intrinsic motivation. The idea of intrinsic motivation comes from psychology and is defined as “acting for the mere satisfaction resulting from the very fact of doing it and not any other consequences. A well-motivated individual acts for pleasure or the challenge itself, not due to an external order, pressure or reward” (Ryan, Deci, 2000: 56). Gary

(2004) claims, however, that hyperarchy favours more the activation of intrinsic motivation rather than creating it. Nevertheless, it means the necessity of creating conditions indispensable to activate this intrinsic motivation.

Khan and Azmi (2005) also indicate unclear limitations of hyperarchical organisation. To create it, mechanisms commonly available on the Internet are used. Joining the community implementing a certain project is possible on a voluntary basis, and the substantive competence is the criterion of acceptance by the community as well as the acceptance of rules governing this organisation, including open communication. This makes the organisation more flexible and scalable. This feature may be traced also within the network organisation, which is a precursor of hyperarchical organisation. Łobejko (2010) says that modern network organisations “increasingly make use of their opportunities outside. This process results in fuzziness corporate borders and merging with the environment”.

To sum up, hyperarchical organisation should be defined as a large scale self-organised community of a high level of energy and involvement despite the lack of clear and immediate gratification for the participants, communicating freely, with every member of the community being able to communicate with any other member of the community in real time, deprived of rigid hierarchies and implementing a common goal and idea. Such an organisation has no fixed borders and is based on a creative potential network of individuals focused around the goal-project-idea. The goal may be subject to evolution under the influence of the community operation, gets out of control and evolve in an indefinite direction. This new type of organisation does not need to have formal members; the basis of exchange is not money but other values that attract the members; thus the possibilities of traditional control are slight.

4. Advantages and disadvantages of the hyperarchical organisation model – conclusions

The definition of hyperarchical organisation clearly specifies the strengths as well as limitations of such an organisation model. The most important advantages, which after all are the reasons for interest in this concept, include:

- great creativity and innovativeness of this sort of organisation – the involvement of specialists creating the hyperarchical structure results in the unlimited generation of a number of ideas which thanks to the lack of rigid hierarchy are subject to a thorough verification based almost entirely on substantive issues,
- flexibility, scalability, adjustment to the changes in environment, risk reduction – no rigid structure, variable sizes of organisation, no material

resources to base on let such an organisation dynamically change under the influence of environment and do not generate unnecessary costs. Under the condition of a large uncertainty, it is in with a chance to guarantee considerable security of the organisation. Risk to a large extent is divided among the community members devoting their time to it,

- a high quality product, subject to thorough verification – involvement of the community freely exchanging opinions, even encouraging members to confront their opinions raises the quality of the final solution.

The disadvantages of hyperarchical organisation are connected first of all with the difficulty in creating and managing it:

- unpredictability of evolution of company goal comprehension, difficulty with coordination and control – under the influence of the work of the community the goals may change and evolve. On the one hand, it is a strength to raise the flexibility of organisation. On the other, the final effect may be far away from the initial goals of the organisation. The coordination of activities and their channelling have to be based on common acceptance, not on formal authority,
- difficulties with the maintenance of workers' involvement – the success of hyperarchical organisation is based on members' involvement. It may gradually die down, e.g. due to the evolution of the project in a direction not accepted by some members,
- broad access to the worked out solutions – the application of this model can hardly be imagined in the situation when the company wants to keep the proposed solutions secret in order to make use of them later,
- communication problems connected with the dispersion of workers and often their limited physical contact – the hyperarchical model was possible due to the advancement of the Internet and the communication instruments based on it. The instruments, however, have a lot of defects related mainly to the limited physical contacts among the members of the community.

Can the hyperarchical model be implemented in life or is it only a theoretical being? As a matter of fact, the examples of the hyperarchical structure are numerous at present. The most common example of hyperarchy is all sorts of open source projects, in particular those connected with computer software creation. When describing these projects, one can notice all the aforementioned advantages and disadvantages of hyperarchy¹. More and more organisations from outside the IT industry begin to notice the advantages of models close

¹ This issue is comprehensively discussed by e.g. Goldman and Gabriel (2005)

to hyperarchy. The development of virtual communities working out definite solutions or business projects may be useful in a number of areas. The example to be quoted may be IT related projects like Wikipedia. There are also much more distant phenomena connected with the presented model like open innovation (Łobejko, 2010) or crowdsourcing (Królak-Wyszyńska, 2011). Some theoreticians predict the application of this model also in science (Hessel, 2005), legal services (Jones, 2005) or generally in projects requiring a number of people with different qualifications (Shah, 2005). In every case, however, the construction of a hyperarchical community is connected with reformulating the current models of management. Hyperarchy may only exist as an isolated part within a more traditional organisation and be at least virtually connected with parts of more hierarchical organisations. This model seems to make use of the advantages of hyperarchy as well as to minimise its disadvantages.

The present paper does not solve naturally all doubts connected with the creation of new organisational models due to the changes in the environment of modern organisations – it is only a synthetic presentation of the concept of hyperarchical organisation and its selected sources. A separate problem requiring further analysis is the issue of the implementation of this model in the different sectors of economy in Poland and in the world. These issues are the subject of further research to be done by the author.

Bibliography

- Aldrich H. E., *Organizations and Environments*, Englewood Cliffs, 1979.
- Ansoff H. I., *Zarządzanie strategiczne*, PWE, Warsaw 1985.
- Byrne J. A., *The Virtual Corporation*, Business Week, 8, February 1993, 98–103.
- Burns T., Stalker G. M., *The management of innovation*, Tavistock publications, 1961.
- Castells M., *Spółeczeństwo sieci*, Wydawnictwo Naukowe PWN, Warsaw 2010.
- Child J., *Organizational Structure, Environment and Performance: The Role of Strategic Choice*, *Sociology*, 1972, No. 6.
- Chandler jr., A. D., *Strategy and Structure. Chapters in the History of the Industrial Enterprise*, MiT Press, Cambridge, MASS, 1962.
- Davidow W. H., Malone M. S., *The Virtual Corporation*. New York, Harper 1992.
- Encyklopedia organizacji i zarządzania, team work*, PWE, 1982.
- Evans Ph., Wurster Th. S., *Strategy and the New Economics of Information*, „Harvard Business Review”, Sep/Oct 1997, Vol. 75, Issue 5, pp. 70–82.
- Gach D., Nowak O., *Firma wirtualna – model przyszłościowy*, *Przegląd Organizacji*, 1997, No. 12.

- Gary L., *The Rise of Hyperarchies*. Harvard Management Update, 2004, 9(3), p. 3.
- Goldman R., Gabriel R. P., *Innovation Happens Elsewhere. Open Source as Business Strategy*, Morgan Kaufmann Publishers, San Francisco 2005.
- Hessel A., *Open Source Biology*, in: DiBona Ch., Cooper D., Stone M., *Open sources 2.0: the continuing evolution*, O'Reilly Media, 2005, pp. 281–296.
- Hopej M., Kamiński R., *Struktury organizacyjne współczesnych organizacji*, Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław 2010.
- Hrebiniak L. G., Joyce W. F., *Organizational Adaptation: Strategic Choice and Environmental Determinism*, *Administrative Science Quarterly*, 1985. IX.
- Jarillo C., *On Strategic Networks*, *Strategic Management Journal*, 1988, No. 9, pp. 31–41
- Jones P., *Extending Open Source Principles Beyond Software Development*, in: DiBona Ch., Cooper D., Stone M., *Open sources 2.0: the continuing evolution*, O'Reilly Media, 2005, s. 273–280.
- Kasper-Fuehrer E. C., Ashkanasy N. M., *The Interorganizational Virtual Organization*, *International Studies of Management & Organization*, Winter 2003, Vol. 33, Issue 4, pp. 34–64.
- Khan M. N., Azmi F. T., *Reinventing business organisations: the information culture framework*, *Singapore Management*, 1 July 2005, pp. 37–62.
- Kołodko G. W., *Wędrujący świat*, Pruszyński i S-ka, Warszawa 2008.
- Kotarbiński T., *Traktat o dobrej robocie*, Ossolineum, Wrocław 1973.
- Królak-Wyszyńska K., *Mądrość tłumów – dobre praktyki w crowdsourcingu, e-mentor*, 2011, 2 (39), pp. 64–68.
- Krzyżanowski L., *O podstawach kierowania organizacjami inaczej*, PWN, Warsaw 1999.
- Lawrence P. R., Lorsch J. W., *Organization and environment: managing differentiation and integration*, Division of Research, Graduate School of Business Administration, Harvard University, 1967.
- Łobejko S., *Przedsiębiorstwo sieciowe*, Szkoła Główna Handlowa w Warszawie, 2010.
- Mączyńska E., *Globalna niepewność a trwałość rozwoju*, in: *Polska Wobec wyzwań cywilizacji XXI wieku*, red. A. Kukliński, K. Pawłowski, J. Woźniak, Urząd Marszałkowski Województwa Małopolskiego, Kraków 2009, p. 55.
- Mintzberg H., *The Structure of Organisations*, Englewood Cliffs: N.J. Prentice Hall, 1979.
- Mintzberg H., *The Design School: Reconsidering the Basic Premises of Strategic Management*, „*Strategic Management Journal*”, March 1990.
- Najda-Janoszka M., *Organizacja wirtualna: teoria i praktyka*, Difin, Warszawa 2010.
- Perechuda K., *Organizacja wirtualna*, Ossolineum, Wrocław 1997.
- Ryan E., Deci R., *Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions*, *Contemporary Educational Psychology*, 2000, 25, pp. 54–67.

- Sankowska A., Wańtuchowicz M., Korzyści z zastosowania koncepcji organizacji wirtualnej w świetle teorii i badań własnych, *Ekonomika i Organizacja Przedsiębiorstwa*, 2007, No. 6.
- Scholz C., *Virtuelle Organisation: Konzeption und Realisation*, *ZFO Zeitschrift für Organisation*, 1996, Vol. 65 (4), pp. 204–210.
- Shah S. K., *Open Beyond Software*, w: DiBona Ch., Cooper D., Stone M., *Open sources 2.0: the continuing evolution*, O'Reilly Media, 2005, pp. 339–360.
- Szymański W., *Globalizacja, wyzwania i zagrożenia*, Difin, 2001.
- Van Alstyne M., *The State of Network Organization: A Survey in Three Frameworks*, „*Journal of Organizational Computing*”, 1997, 7(3), pp. 88–151.
- Walas-Trębacz J., Tyrańska M., Stabryła A., *Koncepcja sformalizowanej struktury organizacyjnej*, in: Stabryła A. (ed.), *Doskonalenie struktur organizacyjnych przedsiębiorstw w gospodarce opartej na wiedzy*, Wydawnictwo C.H. Beck, Warszawa 2009.
- Warner M., Witzel M., *Zarządzanie organizacją wirtualną*, Oficyna Ekonomiczna, Kraków 2005.
- Weber S., *The Success Of Open Source*, Harvard University Press, Cambridge (Massachusetts), London 2005.
- Zimmewicz K., *Współczesne koncepcje i metody zarządzania*, WN PWN, Warsaw 1999.

Migration into the Shadow: Unregistered Work in Poland

1. Introduction

Unregistered work, also referred to as undeclared work or work *under the table* is one of the basic aspects of the shadow (grey, informal, unofficial) economy and an inherent element of modern economic systems.

The significance of the shadow economy in meeting the needs of consumers and households is confirmed by the results of research of unregistered work carried out in 2007 among people in 27 EU countries. They indicate that unregistered business activities are a fairly common phenomenon; about 25% of the EU population have something to do with the shadow economy either on its supply or demand side. About 11% of the respondents declared making purchases of goods or services within the grey economy, whereas about 5% of inhabitants of EU countries admitted to having done unregistered work in the last 12 months preceding the survey¹.

Unregistered work plays also a significant role in the everyday life of a number of Polish consumers and households, although it arouses ambivalent feelings and is burdened with numerous negative connotations. The negative perception of work “under the table” is due to the fact that it depletes the state budget revenues, does not contribute to the National Insurance Fund and deprives the people working in this way of workers’ rights. On one hand, however, unregistered gainful employment in the grey zone amortises shocks and perturbations on the labour market in the official sector of the economy, providing households with incomes allowing them to survive difficult crisis situations and recession periods on the official labour market.

The examination of the scale of unregistered business activity is important for a variety of reasons². On the one hand, informal business activities are often connected with the breach of law, which results in considerable social and economic

¹ C.f. Undeclared work in the European Union. Report, Special Eurobarometer, October 2007, *op. cit.*: M. Kozyra-Cybulska, A. Molenda, E. Wojnar, M. Zielański, Badanie warunków i jakości życia oraz zachowań ekonomicznych w gospodarstwach domowych. Działalność nierejestrowana, Urząd Statystyczny w Rzeszowie, Rzeszów 2010, p. 5.

² C.f. more of this subject, also with regard to methodological aspects and dilemmas connected with estimation of the volume of unregistered work: S. Cichocki, J. Tyrowicz, Źródła zatrudnienia nierejestrowanego w Polsce, „Bank i Kredyt”, 2010, No. 1.

costs: e.g. reduced tax revenue for the state budget, lower contributions to the national insurance system as well as the phenomenon of unfair competition, which limit possibilities of creating new socially secured jobs within the official sector. On the other hand, the grey economy contributes to the volume of output in the economy and the recovery of consumer demand. Eventually, it provides the unemployed with income or completes the income of people employed in the official sector. Thus, it makes the standard of living of consumers and households higher. A full and objective analysis of unregistered work has to consider both negative and positive aspects in the macro- and microeconomic dimensions and cannot disregard social and psychological implications³.

2. Causes of the informal labour market growth in Poland

Unregistered work including different activities within the grey economy has a considerable impact on satisfying the needs of consumers and households. Because the phenomenon is quite common, the Central Statistical Office has monitored the informal labour market since 1995. The first complex research of unregistered work was carried out in Poland in 1995 within systematic research of the population business activity (BAEL). More research was carried out in 1998, 2004 and 2009. The results of the last research of unregistered work carried out in Poland in 2009 will be presented in this article.

The survey focused on the opinions of respondents concerning the reasons for taking on unregistered jobs and the scope and scale of the phenomenon from the supply perspective (unregistered work done by the respondents and their households) and demand perspective (unregistered employment given by the respondents and their households). The questionnaire questions concerned doing or taking advantage of unregistered work in the period of 9 months in 2009 (from January to September).

In the face of difficulties connected with finding a job on the official labour market, informal gainful employment plays an important role in the everyday lives of Polish consumers and households. Poles tend to undertake business activity in the form of unregistered work due to the lack of opportunity of finding a job in the official sector (private or public), a hard financial situation and insufficient incomes unable to satisfy basic needs, the opportunity to obtain higher pay for unregistered work as well as excessive fiscal burden (taxes and national insurance contributions) – see Table 1.

³ More on the subject: B. Mróz, *Gospodarka nieoficjalna w systemie ekonomicznym*, Szkoła Główna Handlowa, Warsaw 2002 (Chapter VI).

Table 1. Five major causes of the involvement in unregistered work in 1998, 2004 and 2009 (in percentages of the total number of people in unregistered employment)

Cause	Year		
	1998	2004	2009
Insufficient income	59.0	42.1	44.7
Lack of opportunity to find a job	47.2	57.3	50.0
Higher pay without registering the contract of employment	22.2	16.3	29.3
Excessive taxes	23.8	11.9	21.9
Excessive national insurance contributions (ZUS)	17.4	19.1	21.8

Source: Praca nierejestrowana w Polsce w 1998 r. (Unregistered work in Poland) GUS, Warsaw 1999; Praca nierejestrowana w Polsce w 2004 r., GUS, Warsaw 2005, p. 30; M. Kałaska, Monitoring rynku pracy. Praca nierejestrowana w Polsce w 2009 r. (Labour market monitoring. Unregistered work in Poland in 2009), Główny Urząd Statystyczny, Departament Pracy. Materials for the news conference of 23 December 2010, p. 3.

A considerably smaller impact on the involvement in the informal sector, according to the respondents, was exerted by the possibility of losing some benefits after taking on a registered job, family and life situation, and quite marginal – unwillingness to be permanently bound to the workplace.

From the perspective of an individual consumer or household, there are three main causes of unregistered job involvement:

- acquiring a job, and income thanks to it,
- acquiring a higher income than in the case of registered work in the official sector,
- acquiring funds to complete other incomes.

A closer analysis of the survey results referring to the causes of doing unregistered work did not indicate essential differences between genders: men's and women's opinions on the issue are similar. A slightly higher percentage of women think that the cause of unregistered work is the lack of opportunity to find a job (52.4% in relation to 49.6% of men), on the other hand, more men than women pointed to high insurance contribution as a cause of migration into the shadow (21.9% and 18.2% respectively), taxes discouraging the registering of incomes (18.5% and 14.8%), also the fact that the employer offers higher remuneration without registering the contract of employment (24.9% and 21.6%)⁴.

⁴ C.f. M. Kałaska, Monitoring rynku pracy. Praca nierejestrowana w Polsce w 2009r., Główny Urząd Statystyczny, Departament Pracy. Materials for the news conference of 23 December 2010, pp. 3–4.

There are no considerable differences between the opinions of inhabitants of rural and urban areas on the causes of unregistered work. In both cases the highest percentage of people indicated the lack of opportunity to find a job as the most essential cause of work *under the table*, with 48% of responses in the rural and 56.3% in urban areas. Insufficient incomes were indicated by nearly an identical percentage of the urban and rural population (45.1% and 45.0% respectively). The third most important reason, i.e. higher remuneration without registration of the contract of employment was indicated by 24.5% of the urban and 20.6 rural population, and a high insurance contribution was also more often indicated by town dwellers (20,4%) than villagers⁵.

For the youngest group of respondents (aged 15–24), who are especially susceptible to the fluctuations on the labour market, the main cause was also the lack of opportunity to find a job: in this age group the percentage of respondents pointing to this reason was very high and amounted to 58.2%. Other reasons (except for the reluctance to be permanently bound to the workplace) were generally indicated more seldom by young people than in the remaining age groups.

The analysis of the causes of taking on unregistered jobs depending on the level of education gives rise to conclusions that come as no surprise. The essential reason for the involvement in the shadow economy, i.e. the lack of opportunity to find a job in the official sector, which seems intelligible was more often mentioned by the respondents with a lower level of education. While better educated respondents pointed to excessive taxes and national insurance as the cause of taking on unregistered jobs.

3. Estimates of the scale of unregistered work in Poland

In the period of over 20 years of systemic transformation in Poland the informal labour market has been a buffer alleviating the tensions in the official sector of the economy created by, for instance, processes of privatisation and restructuring of companies creating the foundation of the economic system. The results of research carried out by the Central Statistical Office (GUS) as well as other research projects⁶ indicate a significant role of unregistered work as a way of earning untaxed income to complete the budgets of Polish consumers and households.

Preliminary estimates made on the basis of a nation-wide survey carried out by GUS in 2009 indicate that the scale of informal gainful work declined

⁵ *Ibidem*.

⁶ *Przyczyny pracy nierejestrowanej w Polsce*, ed. M. Bednarski, E. Kryńska, K. Pater, M. Walewski, Warsaw 2008.

considerably in comparison with the situation that had taken place before, though it is still significant. In the period of the first 9 months of 2009 (from January to September) in the shadow economy there were 785,000 workers, while in the analogous period in 2004 – 1,317,000, which accounted for 4.9% and 9.6% of all employed respectively⁷. In the light of the research carried out by GUS, the decline in employment in the informal economy in 2009 is significant but one should be very careful in formulating explicit diagnoses and uncompromising conclusions with regard to the situation on the informal labour market in Poland.

Firstly, in the period of 2006–2008 Poland had a high economic growth rate, which made companies in the official sector raise employment considerably, which it then translated into the decline in employment in the grey economy. In 2009 (when the GUS survey was carried out) the reduction of employment in the informal economy was favoured by hefty funds of about 4 billion zlotys (about 1 billion euros) at the disposal of employment offices earmarked for active forms to fight unemployment. Supposedly, in 2010, factors in favour of employment growth appeared in the grey economy again.

Secondly, respondents' declarations revealed in questionnaires should be treated with reserve; some people do not admit to doing unregistered work or cannot see a difference between employment in the shadow economy and work in the official sector of the economy. According to some experts' estimates, 16 to 20% of people doing unregistered work in Poland do not admit it⁸.

Thirdly, it is to be considered that there is an increasingly large role played on the informal labour market in Poland by foreigners doing, unattractive for Poles, kinds of unregistered jobs that are not included in the GUS survey.

In the light of the GUS data, since the first research of unregistered work in 1995, the number of people working in the informal economy has systematically declined (in 1995 – about 2.2 m; in 1998 – about 1.4 m; in 2004 – about 1.4 m and in 2009 – 785,000)⁹. It seems that this decline can be attributed to the economic growth of Poland in the period of transformation and the growing business activity of SMEs within the official sector resulting from it. At the time of prosperity small and medium entrepreneurs claimed a lower demand for unregistered work. A decisively deeper slump in the number of people working *under the table* in 2009 resulted, supposedly, from the economic and financial crisis in the period of 2008–2009 which spread through the majority of countries, including Poland, and limited business activity also in the grey economy. Presumably, entrepreneurs in the first place resign from unregistered work done for them, hoping for better

⁷ M. Kałaska, *Monitoring rynku pracy...*, *op. cit.*, p. 2.

⁸ C.f. Szara strefa się zmniejszała, ale teraz rośnie, „Parkiet”, 29.12.2010.

⁹ M. Kałaska, *Monitoring rynku pracy...*, *op. cit.*, p. 15.

business conditions, which means that they treat the dismissals of formally employed people as the last resort, private individuals reduce taking advantage of work *under the table* due to the more difficult and uncertain financial situation of households.

From the perspective of the entities involved, it is essential whether the work done informally is the worker's main job or an additional source of income to complete the household budget. In fact, in 2009 unregistered work for 436,000 people working *under the table* was the main job. In 2004, in both absolute and relative dimensions, the number of people working informally and treating unregistered business activity as their main jobs was higher and amounted to 829,000, which accounted for 62.9% of all people working *under the table* (Table 2).

Table 2. Work in the shadow economy as the main and additional employment – the number and structure of workers in 2004 and 2009

Character of work in the grey economy	2004		2009	
	Number of workers (in thousands)	%	Number of workers (in thousands)	%
Unregistered work in the shadow economy as the main employment	829	62.9	436	55.5
Unregistered work in the shadow economy as additional employment	488	37.1	349	44.5
Total	1317	100	785	100

Source: Author's own materials on the basis of: Monitoring pracy nierejestrowanej..., *op. cit.*, pp. 7–8.

Table 2 indicates that the general decline in the number of people employed in the grey zone in 2009 in comparison with 2004 was caused first of all by the decline in the number of people (by 393,000, i.e. 47.4%) for whom it was the main job. In the case of unregistered work treated as additional gainful employment, the decline was smaller, both in absolute and relative terms (139,000 and 28.5% respectively).

Informal gainful activity in Poland, as in other countries, has to a large extent a casual, occasional and seasonal character. In the period of January – September 2009 about 22% (about 171,000) of respondents worked for a short time. Nearly 45% of people working in the grey economy worked up to 20 days in a year, under 17% worked 91 days and more. On the average, people working informally worked 48 days, i.e. a little over a month and half in the period of

the examined three quarters of 2009. In comparison with the analogous period of 2004, when the average number of days worked *under the table* amounted to 35, it means a rise of 37%¹⁰.

4. Kinds of jobs done in the shadow economy and incomes obtained from unregistered work

According to a commonly rooted conviction, demand for unregistered work is claimed mainly by small and medium private companies. In the light of research done in 2009, it appeared, however, that a decisive majority of employers (71.5%) are private individuals representing households. 24.6% of employers are cooperative and private companies, whereas the remaining 3.9% are generally physical persons carrying out their own business activity and to a very small degree state companies (0.2%)¹¹.

It was interesting to empirically analyse what kind of jobs are most often executed informally. In the opinion of all the respondents, i.e. people at the age of 15 and older, the grey economy had to do most frequently with construction and installation renovations and repairs, construction and installation services, child and elderly care, trade and housework (e.g. cleaning). Other jobs that were quite frequently mentioned included private tuition, gardening or agricultural work and tailoring services (Table 3).

Table 3. Most frequent jobs in the shadow economy in 2009 in respondents' opinions

Kind of work	Respondents' indications in percentages
Construction and installation renovations and repairs	47.3
Construction and installation services	39.3
Child and elderly care	26.8
Trade	21.9
Housework (e.g. cleaning)	21.7
Private tuition	20.4
Gardening and agricultural work	16.1
Tailoring services	10.7

* percentages do not come up to 100, as respondents might point to more than one kind of work.

Source: own materials on the basis of M. Kałaska, *Monitoring rynku pracy...*, op. cit., p. 13.

¹⁰ M. Kałaska, *Monitoring rynku pracy...*, op. cit., p. 9.

¹¹ *Ibidem*, p. 16.

Gainful activities in the shadow economy refer to both men and women, however, there are significant differences in the gender cross section as far as the kind of unregistered jobs is concerned. Some jobs done in the grey economy are dominated by women, whereas others are done nearly exclusively by men. For instance, medical and nursing services as well as hair dressing and cosmetic services in the informal economy are done mainly by women; housework, nursing, tailoring tourist and catering services, private tuition, accounting and legal advice as well as translation are the women's domain. Other activities in the grey economy have a typically male character: it concerns first of all construction and installation services, and construction and installation repairs, electro-technical equipment repair, property protection and security and transport services¹².

Unregistered work is diversified with respect to the kind of work, its time and pay. It is difficult to acquire credible information about income from work done informally for two reasons. First, a large percentage of respondents do not want to reveal the information on the income they earned in the month in which they last did work in the shadow economy. Second, the examined people tend to understate the income earned on account of unregistered work. Admittedly, a great majority of respondents (about 75%) gave information on the income from work done informally, but the results obtained should be treated with caution and hasty generalisations should be avoided, bearing in mind the above mentioned reservations.

Monthly incomes earned by respondents for informal work are characterised by considerable diversity, which results from the kind of work done as well as the spread of contractual rates for a definite job to do.

Table 4. Monthly income earned for unregistered work in 2009 in cross gender section

Volume of monthly income (in PLN)	Men	Women
Up to 100	7.8	11.2
101–200	9.1	12.3
201–400	9.7	17.3
401–600	10.6	9.3
601–800	6.2	9.6
801–1000	9.7	6.9
1000 and more	19.7	8.8
No response	27.2	24.6

Source: own materials on the basis of M. Kałaska, *Monitoring rynku pracy...*, *op. cit.*, p. 14.

¹² *Ibidem*, pp. 23–24.

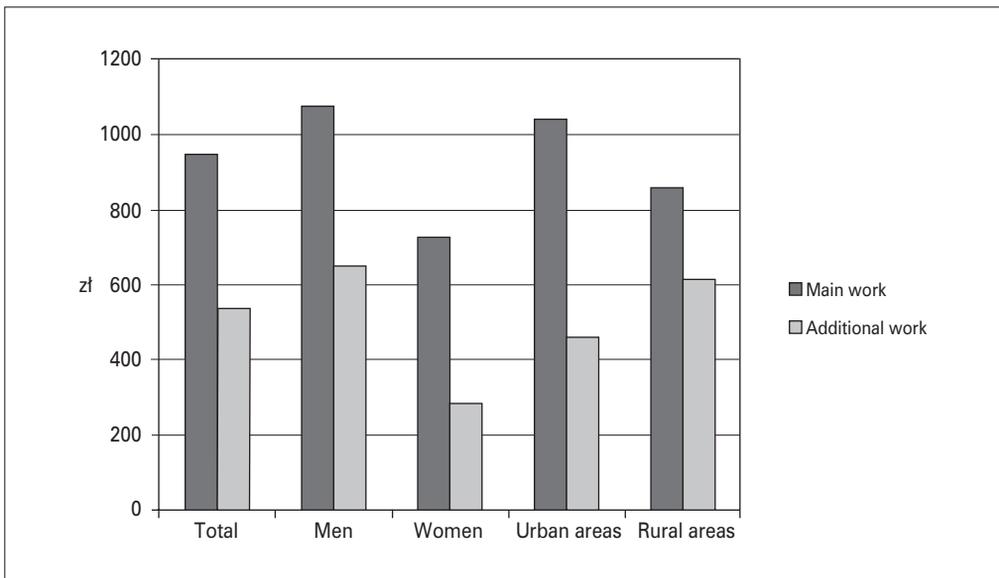
An average monthly income from unregistered work amounted to 779 zlotys and was decisively higher in the case of men – 892 zlotys than women – 559 zlotys.

The place of residence of people working in the informal economy had little impact on the level of average income: town dwellers earned a monthly income of 797 zlotys, while those living in the country – 761 zlotys.

The age of many people working in the shadow economy was the factor that diversified their average incomes earned for unregistered work: the highest income went to people at the age of 25-34 (906 zlotys), and the lowest to the oldest, at least 60 (359 zlotys).

The level of education of people working informally had also a strong impact on the average level of monthly incomes from work *under the table*. The lowest incomes were earned by people with post-secondary education – 519 zlotys, and the highest by people with basic vocational education – 883 zlotys. People with secondary vocational and comprehensive education earned 817 zlotys, and with secondary junior only – 655 zlotys.

Figure 1. Average monthly income from unregistered work in 2009



Source: M. Kałaska, *Monitoring rynku pracy...*, *op. cit.*, p. 15.

This, seemingly paradoxical, breakdown of average monthly incomes results from the fact that for the people with a higher level of education, unregistered work is rarely the main job. It is frequently additional work, a short-term occasional job, which is connected with a lower income. The results of the discussed GUS

survey indicate that in 2009 an average declared income from the main job was 76% higher than an average income from additional work, amounting to 951 and 541 zlotys respectively¹³.

It is worth mentioning that in the case of the gender breakdown of people working in the informal economy: an average monthly income from the main job was higher for men than women, in the division of shadow economy workers according to the place of residence: the income from main jobs was higher in urban areas, while income from additional jobs was higher in the country (Fig. 1).

5. The significance of unregistered work for Polish consumers and households

Work done informally is quite an important element of the Polish labour market. Forms, character and scope of unregistered work depend to a large extent on the general economic situation and the situation on the domestic labour market but also on the situation on the local and to some extent European labour market. The size of the grey economy results not only from the general state of the economy and the volume of registered unemployment but partially also from the structural mismatch of labour force demand and supply.

Work in the shadow economy is a substantial source of budget completing income for a lot of Polish households. It is true especially about those households whose members have lost their jobs in the official sector or represent a low level of education and professional competence and have problems finding secure employment. Numerous households would not be able to support themselves without incomes from work in the grey economy. The research done in 2007 by the Institute of Labour and Social Affairs indicates that more than for half of the respondents (50.4%) incomes earned in the shadow economy are a serious completion of their household budgets; 36.4% admit that they can make both ends meet thanks to unregistered business activity, and 14% state that despite incomes obtained from unregistered work, they are not able to meet all current household needs¹⁴.

The relatively large importance of the informal sector in the Polish economy is affected by social consent, which is on the decline now though. According to the report of the Centre for Social and Economic Research CASE and SMG/KRC Millward Brown, a lot of Poles accept activities in the grey zone. 45% of

¹³ M. Kałaska, *Monitoring rynku pracy...*, *op. cit.*, pp. 14–15.

¹⁴ *Przyczyny pracy nierejestrowanej w Polsce*, ed. M. Bednarski, E. Kryńska, K. Pater, M. Walewski, Warsaw 2008, p. 11.

the examined people would undertake unregistered jobs if only given a chance. It means a considerable acceptance and enormous potential for unregistered employment of all sorts. What is more, Poles tend to think that a lot of jobs, especially those that meet household needs should not be levied with tax at all. A large percentage of respondents (34%) claim that there is nothing illegal about unregistered jobs, and 30% are ready to fully accept such behaviour of others, although tax default is accepted only by 17% of respondents¹⁵.

No wonder that in a difficult economic situation households often take advantage of purchases or sales of products and services in the informal sector. Cheaper products and services offered in the shadow economy let the poorest consumers and households make both ends meet. They also facilitate the adjustment to the different business reality for those more affluent. The research carried out by the author in April and May 2009 shows that Polish consumers and households undertook various adjustment steps in relation to the crisis, including buying fake products offered by producers and retailers in the informal economy¹⁶.

6. Summary

The findings of the nation-wide survey on unregistered work carried out by the Central Statistical Office in 2009 indicate that the role of the informal economy in Poland is still considerable. It seems that in the condition of economic crisis and shrinking earning capacities in the official sector, consumers and households attribute a relatively lower significance to the negative aspects of the grey economy, concentrating first of all on the satisfaction of basic life needs and opportunities to earn additional incomes provided by different forms of informal business activity.

Additional incomes earned in the shadow economy let a number of consumers and households survive a difficult situation on the labour market, whereas for some of them they are a prerequisite to retain the standard of living and consumption achieved before. In the face of economic crisis, moral dithering and dilemmas recede into the background, giving way to pragmatism and sober economic calculation. It is a rational behaviour in the microeconomic dimension, however, its effects are disturbing on the macroeconomic scale. The

¹⁵ C.f. Nierejestrowane zatrudnienie w Polsce. Raport końcowy, CASE – SMG/KRC Millward Brown, Warsaw 2008, p. 95.

¹⁶ B. Mróz, Rola szarej strefy w zaspokajaniu potrzeb polskich konsumentów w warunkach kryzysu gospodarczego, in: Reakcje polskiego konsumenta na kryzys gospodarczy, ed. T. Słaby, Szkoła Główna Handlowa, Warsaw 2009.

labour market should be closely watched so that the activity transfer to the shadow economy would not assume an excessive size and cause too many undesirable side-effects. The prevention of these side-effects will be an important challenge for the economic policy.

Bibliography

- Błaszczak A., Wyciągnąć biznes z szarej strefy (How to get business out of the grey zone), „Rzeczpospolita”, 21.01.2010.
- Cichocki S., Tyrowicz J., Źródła zatrudnienia nierejestrowanego w Polsce (Sources of unregistered employment in Poland), „Bank i Kredyt”, 2010, No. 1.
- Kałaska M., Monitoring rynku pracy. Praca nierejestrowana w Polsce w 2009 r. (Monitoring of labour market. Unregistered work in Poland in 2009), Główny Urząd Statystyczny, Departament Pracy. Materials for the news conference of 23 December 2010.
- Kozyra-Cybulska M., Molenda A., Wojnar E., Zielański M., Badanie warunków i jakości życia oraz zachowań ekonomicznych w gospodarstwach domowych. Działalność nierejestrowana (Research of living conditions and standard of living. Unregistered activities), Urząd Statystyczny w Rzeszowie, Rzeszów 2010.
- Mróz B., Gospodarka nieoficjalna w systemie ekonomicznym (Unofficial economy in the economic system), Szkoła Główna Handlowa, Warsaw 2002.
- Mróz B., Rola szarej strefy w zaspokajaniu potrzeb polskich konsumentów w warunkach kryzysu gospodarczego (Role of the grey economy in satisfying needs of Polish consumers in the condition of economic crisis), in: Reakcje polskiego konsumenta na kryzys gospodarczy (Reactions of Polish consumers to economic crisis), ed. T. Słaby, Szkoła Główna Handlowa, Warsaw 2009.
- Nierejestrowane zatrudnienie w Polsce. Raport końcowy (Unregistered employment in Poland. Final report), CASE – SMG/KRC Millward Brown, Warsaw 2008.
- Przyczyny pracy nierejestrowanej w Polsce (Causes of unregistered work in Poland) ed. by M. Bednarski, E. Kryńska, K. Pater, M. Walewski, Warsaw 2008.
- Reakcje na kryzys gospodarczy. Komunikat z badań (Reactions to economic crisis. Research communique), CBOS, Warsaw, February 2009.
- Schneider F., The Economics of the Hidden Economy, Edward Elgar Publishing, Cheltenham 2008.
- Szara strefa się zmniejszała, ale teraz rośnie (The grey zone used to decline, now it is growing), „Parkiet”, 29.12.2010.
- Undeclared work in the European Union. Report, Special Eurobarometer, October 2007.

Benjamin Tobias Peylo*
Centre for Sustainability Management (CSM)
Leuphana Universität Lüneburg

Integration of Sustainability into Modern Portfolio Theory

1. Introduction

Due to a growing world population, scarce resources and the threat of climate change the modern world finds itself confronted with numerous environmental and social problems. Therefore in politics, science and society the concept of sustainable development is discussed as an appropriate reaction (Grunwald & Kopfmüller 2006), where the term of sustainability stands for the long-term optimisation of welfare through economic success in synthesis with the conservation of ecological and social systems. Given the prominence of the economy in a globalised society, it is obvious that the success of sustainability objectives is largely determined by corporate sustainability and thus the integration of sustainability-related objectives and concepts into the design of products, production processes and the management of external impacts of companies (Schaltegger et al. 2003). Thereby corporate sustainability has proven to have a strong business case with regard to competitive advantages and cost saving-effects (Schaltegger & Wagner 2006) as well as subsidies and regulations that come with the sustainability-oriented agendas of many governments (Amram & Kulatilaka, 2009).

Consistently, in the financial markets there is also a growing interest of investors regarding the sustainability-related objectives and activities of listed companies (Peylo & Schaltegger 2009a). The scheme proposed by Beal et al. (2005) links this development to three types of investors. “Rational investors” apply sustainability-related criteria in the investment process to benefit from the opportunities associated with the business case of sustainability. Investors of the second type, who prevail in the retail segment, are “consumption investors”. These regard sustainability as part of a modern lifestyle and adjust their investment style accordingly. Since decades of intensive research have proven the prejudice of an inferior performance of sustainable investment to be false (Kurtz 2005), for them sustainability is an

* Tobias Peylo is a consultant at the German savings bank association in Stuttgart and Ph.D. student at Leuphana University Lüneburg, Germany. His doctoral adviser is Prof. Dr. Stefan Schaltegger, who is full professor for business administration and director of the Centre for Sustainability Management (CSM) at Leuphana University.

additional, immaterial investment return. Lastly, “investing investors“ act out of personal concern for nature and the society. They recognise capital as the most important economic factor and want to make sure that their money reaches companies that use the investment in accordance with sustainability objectives.

Driven by these investors, the market share of sustainable investment has increased significantly. In Germany, its volume in 2009 rose by 68% (FNG 2010), comprising now about 1% of all assets invested. In the United States this ratio already exceeds 11% private mandates excluded (Minor 2007). A recent study estimates that a quota of 15-20% may be reached as early as 2015 (Robeco and Booz & Co. 2010). Yet it should be noted that while these figures do represent an important trend indication, they may vary to a certain extent depending on the strictness of the definition and delimitation of sustainable investments.

To date the implementation of sustainable investment in the investment process is often rather pragmatic: Portfolio choice is made by the application of sustainability-related criteria in an absolute way as positive or negative screens or in a relative way as ratings in a best-in-class approach (for an overview see Schäfer 2001). While these methods are transparent and comprehensible, they are not in line with the ideas of investment theory and especially portfolio theory. There the correlation of assets is used to exploit portfolio effects and to construct asset combinations that are verifiably superior to non-optimised portfolios in regard to risk-return efficiency (Haugen 2001, 60 f.).

This opens room for improvement, and in the literature several approaches exist to link sustainable investment with portfolio theory. All of them follow the same pattern, using an investment universe predefined by the application of sustainability criteria and optimising it subsequently with a conventional methodology. In that way diBartolomeo and Kurtz (1999) optimise the Domini 400 Social Indexes, Dimtcheva et al. (2002) use an optimisation-algorithm to reduce risk in arbitrary sustainability portfolios and Geczy et al. (2003) use factor models to optimise 49 American SRI mutual funds. Lastly Milevsky et al. (2006) optimise a version of S&P index from which non-sustainable stocks were cleared in advance.

Conforming to portfolio theory, all of these approaches succeed in reducing risk and achieving the construction of efficient portfolios. Yet neither of these approaches does treat sustainability as a full-fledged investment objective. Instead they remain strictly in a two dimensional optimisation framework solely focused on return and risk and regard sustainability as a junior criterion, ancillary to these and only used for the pre-selection of assets, not as a stipulation for their configuration. This is in line with the fundamentals of portfolio theory which traditionally excludes all non-monetary aspects from view (Spremann 2006, 30). Yet given the importance and weight of sustainability this is problematic for two reasons.

First, given the fact that sustainability ratings and stock returns are found not to be correlated (Mauritz & Wilhelm 2003, 25), the actual level of sustainability that can be achieved in a risk-return efficient set will be randomised and therefore restricted. For those investors that define a certain level of sustainability as a target or bear the wish to maximise sustainability, this proves to be an imposed limitation hindering them to reach their investment objective. For that reason optimisation is often not applied from sustainable investors (Troutman 2001, 52). The subordinate regard of sustainability implied may even contribute to a tendency of a wider disregard of conventional financial instruments that has been found to account for unnecessary underperformance of sustainable investments in some cases (Adler & Kritzman 2008).

The second problem abstracts from subjective factors and concerns the relationship between corporate sustainability and stock prices. Both the fact that sustainability criteria have to be applied as additional screens and the finding of no significant correlation between sustainability and stock returns give credit to the assumption, that the effects of corporate sustainability are not yet incorporated into the process of stock pricing. This point is strengthened by the findings of Rappaport (2005) that stock prices are to a considerable extent driven by short term information and quarterly statements and therefore increasingly lose the capability to reflect any long term objectives and strategies – to which group sustainability objectives and strategies belong by definition. For this reason the effects of sustainability-related risks, which are ranked among the ten most important business risks (Ernst & Young 2009), will not be anticipated in the stock prices and the key figures that are computed from them. As can be seen with British Petroleum, they will “hit” portfolio performance without premonition, causing losses that could often have been prevented if additional information regarding the sustainability-relation of these stocks would have been considered in the portfolio construction. Likewise, when not integrated from an additional source of information, the beneficial effects of a successfully implemented sustainability business case will only be visible in a good performance in the ex-post view. So if the elevation of the level of sustainability in a portfolio may seem to be at the expense of risk-return efficiency to begin with, this may well prove the other way round when analysed in retrospect.

While the later effect could in some cases be healed by the application of the model of Black and Litterman (1992), where it is possible to influence portfolio weights by integrating subjective expectations of return, it would require a noteworthy ability to evaluate contingencies and still could not be used to assess the risks in the same way. Likewise all qualitative approaches to integrate this information are limited by the complexity of interrelations and portfolio effects

between risk, return and sustainability. Yet an integrated approach that connects these three criteria in an equally weighted, truly three-dimensional view does not exist. Approaches for the regard of other criteria in portfolio theory have been proposed within the methodology of Multicriteria Decision Making (MCDM) (Wallenius et al. 2008 and Köksalan 2009) and in this context it has been pointed out by Steuer et al. (2006, 2007 and 2008), that the regard of sustainability in a similar way would be appropriate. But to date this has not yet been implemented.

2. Scope and proceeding

The scope of this paper is to propose an approach for the methodological, three-dimensional synthesis of conventional and sustainable investment where all three criteria are regarded in their interrelation and can be weighted according to the objectives of an investor. The following two research questions are posed and investigated: In which way can sustainability-related investment criteria be implemented coherently into the management of stock portfolios and what effect derives from that synthesis? Thereby the question of the effect applies to both the design of investment strategies and their results based on portfolio return, risk and sustainability.

The conceptual objective of the paper is to propose an adequate methodology for the integration of corporate sustainability into the management of stock portfolios. The empirical objective is to apply this multidimensional view to the German stock market represented by the German stock index DAX, which comprises the 30 German blue chips with the greatest market capitalisation. To this end in chapter 3 an enhancement of the traditional two-dimensional portfolio theory will be proposed. In combination with the status quo of sustainable investment this will lead in chapter 4 to an approach of a synthesis between conventional and sustainable investment. In chapter 5 this will be tested empirically with revolving portfolio optimisations in the period between September 2003 and June 2010. In chapter 6 the impact on the risk/return performance as well as the sustainability performance of the approach will be compared to the DAX as a benchmark. Finally, chapter 7 derives a final conclusion.

3. Multi-dimensional portfolio selection

3.1. The framework of conventional portfolio theory

Modern portfolio theory is based on the work of Markowitz (1952, 1956 and 1998), Tobin (1958) and Roy (1952). It addresses the normative question of rational

investment in a portfolio of securities (especially stocks). Thereby a portfolio is defined by both the selection of assets from an investment opportunity set (IOS) and the allocation of relative shares of a given capital (Steuer et al. 2006, 201). Compared to an investment in individual stocks the portfolio obtains a quality of its own by compensating volatility and losses between its components (diversification) (Steiner & Uhlir 2001, 137 f.; Haugen 2001, 60 f.). Since this effect cannot be obtained to its full extent by simply adding up securities (which is called a “naive” diversification, the term being derived from the Latin “nativus” which means “intuitive approach”), portfolio theory comprises a framework for an optimized allocation of portfolio-shares (Spremann 1999, 207). Used in the active investment management, which is defined by the implementation of dedicated investment-strategies in contrast to index-tracking, portfolio optimisation can dominate the asset allocation to a varying extent (Fabozzi 1999, 172).

The portfolio theory uses restrictive assumptions and constraints concerning investors and the market environment (Spremann 2006, 53 und 177; Bruns & Bullerdiel 2000, 68; Fabozzi 1999, 39). Some of these assumptions are overly simplistic and cannot be observed in reality. The constraint of foremost importance in the context of this paper is that corporate sustainability (jointly with any other non-monetary objective like strategic investment, merger or similar) is strictly excluded from view (Spremann 2006, 30). Yet, before a framework for the synthesis can be designed, the original methodology of portfolio theory has to be considered because its core-mechanisms must not be changed in the combined approach.

According to conventional theory the critical target of the investors is to maximise portfolio return r_P over a given period of time (Bruns & Bullerdiel 2000, 68). Since return is defined as random variable, its mean μ_i can be calculated from historical data and be extrapolated as a deterministic trend for the near future (Spremann 2006, 61 ff.):

$$\max \{ \mu_P \} \text{ with} \tag{1}$$

$$\mu_P = \sum_{i=1}^I a_i \cdot \mu_i \text{ and} \tag{2}$$

$$a_i \geq 0, \sum_{i=1}^I a_i = 1 \tag{3}$$

where:

μ_P – return of the portfolio,

μ_i – return of stock i ,

a_i – portfolio share of stock i .

The risk of the investment consists in the possibility that this trend is not met due to the volatility of returns. So risk is defined as variance σ^2 or its square root, the standard deviation σ (Steiner & Uhlir 2001, 130). Because of the risk adversity of the investors the second objective of optimization must be to minimise this risk of volatility (Bruns & Bullerdiek 2000, 68):

$$\min\{\sigma_P\} \quad (4)$$

where:

σ_P – volatility (risk) of the portfolio.

Given diversification effects the portfolio risk will be less than the sum of risks of its components. Since diversification results from mutual compensation, it is expressed via the correlation coefficient k_{ij} of two stocks i and j . So the calculation of portfolio risk contains all possible combinations of stocks (Markowitz 1952, 81 interpreted by Steiner & Uhlir 2001, 138):

$$\sigma_P = \sqrt{\sum_{i=1}^I a_i^2 \cdot \sigma_i^2 + 2 \cdot \sum_{i=1}^I \sum_{j=i+1}^J a_i \cdot a_j \cdot \sigma_i \cdot \sigma_j \cdot k_{ij}} \quad (5)$$

where:

σ_i, σ_j – volatility of stocks i and j ,

a_i, a_j – shares of stock i and j ,

k_{ij} – correlation of stocks i, j .

According to the nature of the normal distribution, the standard deviation does not differentiate between upside and downside deviations and only includes about two thirds of possible returns. Therefore the Value-at-Risk (VaR) is often regarded as a more adequate measure of risk. VaR is defined as maximal loss (absolute or relative to investment capital) that can occur in a given period within a given probability (Jorion 1997, 19). It is calculated as follows:

$$VaR_i = \mu_i - M \cdot \sigma_i \quad (6)$$

where:

VaR_i – Value-at-Risk of stock i ,

M – σ -multiplier for the calibration of VaR-probability.

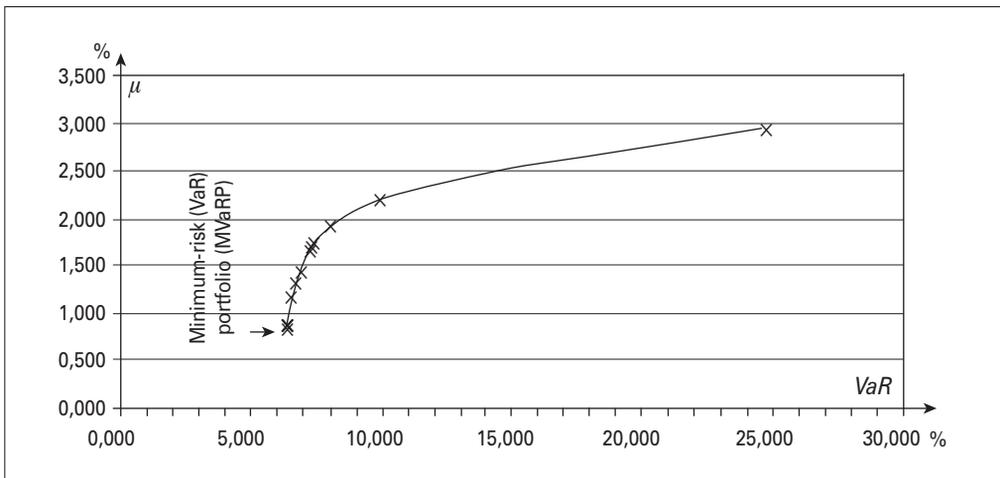
VaR is a suitable substitution for σ and can be integrated consistently into portfolio theory (Gramlich & Peylo 2000). With VaR the formulas (4) and (5) are modified to:

$$\min!\{VaR_P\} \text{ with} \tag{7}$$

$$VaR_P = \sqrt{\sum_{i=1}^I a_i^2 \cdot VaR_i^2 + 2 \cdot \sum_{i=1}^I \sum_{j=i+1}^J a_i \cdot a_j \cdot VaR_i \cdot VaR_j \cdot k_{ij}} \tag{8}$$

By calculating portfolio return and -risk using (2) and (8) for every possible combination of stocks from a given IOS, in a risk-return diagram a surface is obtained that is delimited by the efficient frontier (Markowitz 1952, 82). The efficient frontier is a hyperbola that contains all risk-return efficient portfolio-combinations. It starts in the Minimum VaR-portfolio (MVARP) and ends in the portfolio with the highest return, which consists of the highest return-stock exclusively. For the calculation of the efficient frontier many optimisation-algorithms exist (see Pardalos et al. 1994 for an overview). On this, two different approaches can be distinguished: Parametrical approaches allow to span the efficient frontier as a whole, but then additional calculations are necessary to identify dedicated portfolios on the frontier. Approaches from a “step by step” – type instead build up the efficient frontier starting at either end by systematically identifying all portfolios that are conform to the demand of (1) and (7). That way the individual portfolios on the efficient frontier can be simply read off afterwards.

Figure 1. The efficient frontier of the DAX-IOS optimised March 3rd 2010 with hyperbolic-segments



In the Minimum VaR-portfolio diversification is maximised and therefore it contains more stocks than most other portfolios, yet not all stocks of the IOS are included. Moving from there to the right along the efficient frontier hyperbolic-segments can be identified that are marked by the drop out of stocks from the portfolios (Qi et al. 2009). In figure 1 the efficient frontier for the DAX-IOS is given, whereupon the segments are marked with an “x”. From the number of segments it can be seen that no portfolio of the efficient frontier contains more than approximately half of the stocks of the DAX-IOS due to inappropriate correlations or negative means of the excluded stocks.

Because of the efficiency-principle it is defined that rational investors can only choose a portfolio situated on the efficient frontier (Spremann 1999, 201). Which portfolio is chosen depends on the individual risk-preference of each investor (Bruns & Bullerdiel 2000, 68). This has been formulated by Markowitz as an indifference curve, which contacts the efficient frontier in the investor-specific optimal portfolio (Markowitz 1998, 216). Yet in reality it proves very difficult to formulate the risk-preference, especially for non-institutional investors. Therefore other approaches implement the identification of suitable portfolios via qualitative criteria. The best known target portfolio determined by qualitative criteria is the minimum-risk-portfolio, which was analysed in the empirical work of Kleeberg (1993 and 1996) and Bamberg & Neuhierl (2008). Additionally, target portfolios can be selected by defining a required return (Steiner & Uhlir 2001, 145) or, given a sufficiently transparent risk-measure like VaR, a risk-limit (Gramlich et al. 1999). Via a combination of both criteria the portfolio with the highest Return on Risk Adjusted Capital (RORAC) (Theiler 2002, 48) is another option:

$$RORAC_p = \frac{\mu_p}{VaR_p} \quad (9)$$

where:

μ_p –return of the portfolio,

VaR_p – VaR of the portfolio.

3.2. Multidimensional extension

While many of the assumptions and constraints of portfolio theory cannot be observed in reality, the primacy of return and risk as decision criteria has been criticised as particular hypothetical (Steuer et al. 2007). First, it is contradicted by findings of behavioural finance, which have revealed that the investment-decision is affected by many emotional and situational factors (Thaler 1993 and Peterson 2002). Even with focus on the conscious decision criteria a range of

different objectives can be observed empirically, with the type of purely risk and return-oriented decisions being close to non-existent (Statman 2005). Secondly, the world of financial markets has very much changed in comparison to what it has been like at the time of the creation of portfolio theory, so naturally the significance of criteria has changed, too (Bogle 2008). One particularly important change concerns the length of planning horizons. In contrast to earlier times the mechanism of stock-price formation today is heavily dependent on quarterly reports and short-term data, so naturally this data contains less information about fundamental entrepreneurial risks and chances than they once did (Rappaport 2005). Given these changes it is only rational in the true sense of the word to allow other criteria to enrich the investment decision instead of focusing on short-term return and risk alone.

In consequence of these criticisms of an otherwise conceptual and empirically sound framework an important modification of the portfolio theory is proposed (Steuer 2007, 310 f.). It originates in the field of Multicriteria Decision Making (MCDM) and amends the framework in a way that allows a change of focus without ignoring the existing mechanisms. It substitutes the assumption of an exclusively risk/return-oriented decision by the acceptance of several investment-objectives that are often pursued in parallel.

Modified in this way, the optimisation-criteria (1) und (7) are enhanced by a set of new criteria Z_P that must be either minimised or maximised (Hallerbach & Spronk 2002 and Steuer et al. 2007, 309 f.):

$$\begin{aligned}
 & \max !/ \min ! \{Z_{1P}\} \\
 & \max !/ \min ! \{Z_{2P}\} \\
 & \dots \\
 & \max !/ \min ! \{Z_{nP}\}
 \end{aligned}
 \tag{10}$$

where:

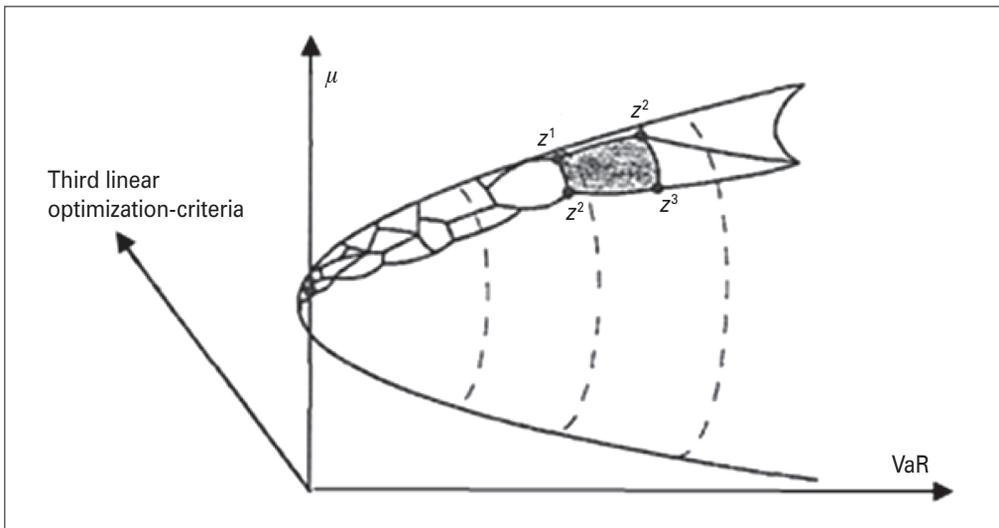
Z_P – criteria of investment-decision and thus of portfolio-optimization.

In the literature, three distinct categories regarding the criteria Z_P emerge: Firstly criteria based on stock prices in analogy of μ and VaR , but concentrating on higher moments of distribution (especially skewness, Prakash et al. 2003 and Jondeau & Rockinger 2006). Secondly criteria linked to the management of investment portfolios like size, transaction-costs or aspects of taxation (Konno & Wijayanayake 2000 and Donohue & Yip 2003). And last but not least investor-specific criteria which can be defined qualitatively (Ballesterro 1998). They can enhance the information contained in stock prices by additional information

(Ehrgott et al. 2004) like for example qualitative ratings (Bana e Costa & Soares 2004).

In the third category the consideration of corporate sustainability has been already mentioned by Steuer et al. (2007 and 2008). But until now no concept has been proposed how to achieve the integration. Yet for the use of other criteria multi-dimensional optimisation-algorithms do exist (Deb 2008 and Alba 2009). Naturally, in comparison to the optimisation results of conventional portfolio theory the multidimensional approach does not produce an efficient frontier but an n-dimensional surface where the hyperbolic-segments become honeycomb-like platelets (Steuer et al. 2006). The surface is not called “efficient”, but “non-dominated” instead. Here the formulation of risk preference alone is not sufficient anymore, because it would result in a vector of portfolios instead of a dedicated target portfolio. Therefore, investors need to define a set of preferences aggregated in a weighting-function.

Figure 2. Conceptual visualisation of the nondominated space for a three-dimensional optimisation with space-segments (similar to Steuer et al. 2006, 215)



4. Synthesis of portfolio theory and sustainable investment

4.1. Sustainable investment

Sustainable investment (synonymously called Socially Responsible Investment SRI) defines the implementation of sustainability objectives into the investment strategy (Beal et al. 2005). There are different methods for this, which can be

divided into three types of approaches (Peylo & Schaltegger 2009a). The first approach gives priority to economic criteria and concerns sustainability criteria as an auxiliary source of information in order to identify extraordinary risks or chances (Uhlmann 2009). It is implemented by using ESG-criteria (environmental, social and governmental factors, CFA Institute 2008). Due to the fact that the CFA Institute as the worldwide largest association of investors explicitly recommends the use of these factors, they are an important step towards the usage of non-financial factors in investment analysis and openly contradict the idea of risk/return as the only rational criteria.

The second class of approaches makes use of negative or positive screens which are applied to the given IOS in order to aid the asset selection (Stone 2000). It is this strategy that has been criticised most severely due to the delimitation of the investment universe. Yet it is not so different at all from other methods of active investment strategies (Plinke 2008) and in comparison bears the advantage that many of the filter-criteria bear a strong link to the ten most important risk-categories (Ernst & Young 2009). The third and most common method of sustainable investment is the relative valuation of corporate sustainability using SRI-ratings (Schäfer et al. 2006). They are implemented in the process of asset selection by Best-in-Class approaches. Here in contrast to strict exclusions from each industry the companies with the best SRI-ratings are selected, enabling the investor both to have a qualitatively diversified portfolio and focusing on corporate sustainability (Pinner 2003). Instead of considering SRI-ratings this approach can also be implemented by using the inclusion of stocks in one or several SRI-indices as a qualification (Gabriel 2005).

All of the approaches are focused exclusively on the selection of assets, bearing no weight to the actual allocation of funds. That is due to the fact that they are all qualitative in nature, while the asset allocation with its task of measuring and controlling portfolio-effects is strictly quantitative. Accordingly few approaches exist to measure or control the degree of sustainability inherent in a given portfolio also (Köllner & Weber 2005). This problem is dealt with immediately below.

4.2. Proposed approach of a synthesis

From the perspective of portfolio theory, all approaches of sustainable investment would be acceptable given the enhancement of the constraints as presented in chapter 3.2, provided that they are applied in the asset selection and that there is a portfolio optimisation afterwards. But this is often not the case as empirical studies show, the asset allocation process of professionally managed sustainable investments being often less systematic and transparent than the asset allocation

(Peylo & Schaltegger 2009b). Yet even if a conventional optimisation would be applied, it would not be integrated as the criteria risk/return and sustainability would be considered separately. So the only homogeneous alternative would be the integration of sustainability as additional criteria in a new three-dimensional portfolio optimisation. It is proposed below.

In this integrated approach corporate sustainability is added to the equation as optimisation-criteria Z_P as presented in (10). Here the portfolio sustainability S_P is defined as a linearly weighted combination of the SRI-ratings of its components. It is to be maximised:

$$\max \{S_P\} \text{ with} \tag{11}$$

$$S_P = \sum_{i=1}^I a_i \cdot S_i \tag{12}$$

where:

S_P – sustainability of portfolio,

S_i – sustainability of stock i (SRI-rating of stock i),

a_i – portfolio share of stock i .

In the implementation two remaining problems of the multi-dimensional optimisation have to be solved: First, while risk and return are cardinal quantitative parameters, the SRI-rating only provides ordinal information without even being standardised or allotted to a distribution. Second, in order to allocate a suited portfolio to every investor and to keep this process transparent, the selection of the target portfolio must not use a complex weighting-function.

The proposed framework is based on an optimisation algorithm of the “step by step” – type and combines the demands (1) and (7) via the minimisation of the slope between portfolios:

$$\min \left\{ \frac{\mu_{P_{n-1}} - \mu_{P_{n,x}}}{VaR_{P_{n-1}} - VaR_{P_{n,x}}} \right\} \tag{13}$$

where:

P_n – efficient frontier portfolio,

X – total of new combinations to reach the next P_n ,

μ_P – return of the portfolio,

VaR_P – VaR of the portfolio.

To aid the minimisation, all X possible combinations are first arranged in an order of decreasing attractiveness using an ordinal number for the risk/return-efficiency O_{PE} :

$$\begin{aligned}
 O_{PE1} = 1 &= \min \left\{ \frac{\mu_{P_{n-1}} - \mu_{P_{n,x}}}{VaR_{P_{n-1}} - VaR_{P_{n,x}}} \right\} \\
 &\dots \\
 O_{PEX} = X &= \max \left\{ \frac{\mu_{P_{n-1}} - \mu_{P_{n,x}}}{VaR_{P_{n-1}} - VaR_{P_{n,x}}} \right\}
 \end{aligned}
 \tag{14}$$

The demand of (13) is equally met by choosing the portfolio with the lowest enumeration:

$$\min \{ O_{PEX} \}
 \tag{15}$$

Hence the risk/return optimisation is transferred to an ordinal form, whereas it is now comparable with any ordinal SRI-rating which solves the first problem stated above. To implement this comparison, also an ordinal number for portfolio sustainability O_{PS} is created:

$$\begin{aligned}
 O_{PS1} = 1 &= \max \{ S_{P,x} \} \\
 &\dots \\
 O_{PSX} = X &= \min \{ S_{P,x} \}
 \end{aligned}
 \tag{16}$$

The combination of (14) and (16) now only needs a simple weight that expresses sustainability preference of the investor and will be named λ . With this, the final and crucial objective for the algorithm is:

$$\min \{ (1 - \lambda) \cdot O_{PE} + \lambda \cdot O_{PS} \}
 \tag{17}$$

where:

- PE – efficiency of portfolio,
- PS – sustainability of portfolio,
- λ – sustainability preference,
- O – ordinal enumeration.

Due to the “step by step“-proceeding of the optimisation, the result is not the complete nondominated space with many options of suitable portfolios. Instead only a non-dominated line is computed that meets the preferred balance between sustainability and risk/return-efficiency as defined by λ . This non-dominated line

is situated in three-dimensional space, nevertheless the same qualitative criteria can be applied as are used with the efficient frontier. In that way the investor doesn't need a complex weighting function but can choose his suitable portfolio by the two simple steps of first expressing his preference between sustainability and risk/return-efficiency and secondly selecting a criteria for the target portfolio as presented in chapter 3.1.

5. Methodology of empirical analysis

5.1. Data

For the empirical analysis of the proposed approach the main German stock index DAX is chosen as an IOS. Launched in 1987 by Deutsche Börse AG, the DAX contains the 30 stocks with the largest market capitalisation (Deutsche Börse 2008) and is often used as a representation of the German equity market. The period of analysis is September 2003 until June 2010. It was predetermined by the availability of publicly available SRI-ratings for all stocks of the IOS, as they are published in the bi-annual study of the rating agency Systainalytics (former Scoris) (Mauritz & Wilhelm 2003, 2005; Wilhelm 2007; Sustainalytics 2010). Those SRI-ratings were used as an assessment of corporate sustainability. The returns/risks were computed from the daily closing prices of all DAX-stocks provided by the stock price database of the University of Karlsruhe (Universität Karlsruhe 2010).

The DAX contains 30 stocks, yet due to reallocations in the period of analysis 42 different stocks were at least for some time part of the index (Deutsche Börse Group 2010). For two companies, namely Hannover Rück and Heidelberg Cement, no SRI-ratings were published, because they entered and left the index between two publication-dates. Therefore they were excluded from the analysis.

By computing the return and risk-parameters three factors of influence were considered as they are defined by the German banking supervision (BaFin 2002): The reference period (length of the time series for each optimisation) is 250 trading days, the holding period (number of days for which the calculated risk/return-figures are considered valid) is 10 days and for the Value-at-Risk (VaR) the multiplier M is defined as $M = 3$. In the last aspect the risk assessment was more rigorous and cautious than is demanded by the present regulatory framework, where only a Multiplier of $M = 2$ up to $M = 2,33$ is required. Therefore the approach anticipates the new development of safety oriented requirements; even so it is not yet in line with the new proposals of Basel III.

5.2. Optimisation and evaluation

The optimisation algorithm implements the principles as they were presented in chapter 2.1 and 4.2. It was programmed in Visual Basic for Applications (VBA) by the author. A three-dimensional optimisation requires λ as predefined sustainability preference. In order to simulate different types of investors, three variants a-c were designed with λ being 25% (a), 50% (b) and 75% (c). For these variants a non-dominated line in three-dimensional space was calculated representing in its characteristics the chosen λ .

Due to the defined holding period, optimisation is repeated every ten trading days. The calculated risk/return key figures are considered valid for the ten following days. This led to 178 dedicated portfolio optimisations for each of the 3 variants. Each optimisation resulted in non-dominated lines. From these each, three target portfolios were selected and evaluated. The first target portfolio is the MVARP because of its prominence in literature and its importance as the portfolio with the highest degree of diversification. The second portfolio is aimed at maximising financial performance so the portfolio with the highest Return Risk Adjusted Capital is chosen (below called RORAC-Max). Consequently, the third target portfolio maximises sustainability and is determined as the portfolio with the highest weighted SRI-rating (below called S-Max). After each optimisation, for each target portfolio the risk/return figures were recorded. Additionally for all stocks included in the target portfolio the stock prices of the ten trading days following the optimisation were recorded for back testing-purposes.

The first step of evaluation concerns the risk/return-performance. To enable the comparison of performance, the Return on Risk Adjusted Capital (RORAC) is calculated as it was presented in (9), since it is an established performance-assessment (Fischer 2001, 280 ff.). To integrate the benchmark into the analysis, the performance of the benchmark was subtracted from the portfolio performance. The resulting key figure is called “RORAC+“ and allows direct regard to the performance in relation to the prevailing market-conditions:

$$RORAC+ = RORAC_{target - portfolio} - RORAC_{DAX} \quad (18)$$

where:

$RORAC+$ – difference between the RORAC-figures of target portfolio and benchmark.

The second step of evaluation concerns the sustainability of the portfolio. In analogy to (18) here also the difference between portfolio sustainability and the

sustainability of the benchmark (as defined by the SRI rating score) is calculated and called „S+“:

$$S+ = S_{target - portfolio} - S_{DAX} \quad (19)$$

The combined assessment of (18) und (19) is the third and final step of the evaluation.

Since the portfolio performance is greatly dependent on the conditions of the overall market, the results were further differentiated to market-phases as an additional test for the robustness and validity of the approach. While no standard exists for the concept of phase-oriented performance measurement, approaches have been proposed by Baule and Bedke (2008, 352-353) where significant market cycles were differentiated by years as well as by González-Hermosillo (2008) and Uhlenbrock (2009), who focus especially on the phases with significant falls of stock prices. The period of analysis here is seven years, so an annual phase differentiation seemed to long for a meaningful analysis, so a quarterly approach was chosen instead. Thereby market phases were classified as follows: If in a given quarter up- or downward developments of the DAX were observed that exceed $\geq 10\%$ or $\leq -10\%$ in the defined holding period of 10 trading days, the quarter is labelled as an extreme “rise” or “fall”. If no such extreme developments are observed, it is classified as “normal”.

The definition of 10% is plausible but never the less arbitrary, so tests with other limits were made where the results proved to be very robust. In the holding period a total of 6 fall phases (namely the quarters 2/2006, 1/2008, 3/2008 – 1/2009 and 2/2010), 2 rise phases (02/2009 and 03/2009) and 19 normal quarters were differentiated. The rise phases were discarded in the following analysis as they were too few, but the fall phases and normal phases will be used to put the results into perspective of the surrounding market conditions.

6. Results

According to the methodology of evaluation as presented in chapter 5, all variants were optimised in a revolving manner during the period of analysis. Figure 3 lists the results for the performance evaluation. All figures are given for each target portfolio in all variants as well as for the DAX as a benchmark. The first columns do concentrate on financial performance with the RORAC as presented in (9) and the RORAC+ as defined in (18). A positive figure for the latter represents that the target portfolio within the specific variant had a better risk/return ratio than

the benchmark and so outperformed the DAX financially. In order to consider the stability of these outcomes, the standard deviation of these figures is given also. In the following columns the same presentation is given for sustainability-performance with the SRI-rating of the portfolio as defined in (12), the $S+$ as given in (19) and the standard deviation for $S+$. The last column lists the mean of the number of stocks included in the target portfolios in order to give consideration to the portfolio-size.

Figure 3. Performance results

DAX							
Variants	RORAC			S			
All Variants	3,29%			58,60			
MVaRP							
Variants	RORAC	RORAC+	σ_{RORAC+}	S	S+	σ_{S+}	Assets
Variant a ($\lambda = 0,25$)	6,35%	3,06%	14,37%	62,21	3,62	3,69	7,66
Variant b ($\lambda = 0,5$)	1,26%	-2,02%	13,87%	65,47	6,88	2,71	6,77
Variant c ($\lambda = 0,75$)	4,02%	0,73%	10,27%	66,87	8,28	6,33	5,68
RORAC-Max							
Variants	RORAC	RORAC+	σ_{RORAC+}	S	S+	σ_{S+}	Assets
Variant a ($\lambda = 0,25$)	9,24%	5,95%	16,66%	66,07	7,48	3,95	4,88
Variant b ($\lambda = 0,5$)	5,03%	1,74%	15,70%	70,41	11,82	2,33	4,35
Variant c ($\lambda = 0,75$)	3,50%	0,21%	14,51%	73,68	15,08	4,30	3,19
S-Max							
Variants	RORAC	RORAC+	σ_{RORAC+}	S	S+	σ_{S+}	Assets
Variant a ($\lambda = 0,25$)	8,32%	5,03%	20,86%	70,69	12,09	3,01	2,86
Variant b ($\lambda = 0,5$)	3,55%	0,26%	16,63%	72,91	14,31	2,30	2,74
Variant c ($\lambda = 0,75$)	2,45%	-0,84%	13,46%	75,36	16,76	4,07	1,85

Concerning financial performance all results of variant a) and two portfolios each of b) and c) have outperformed the DAX. This outperformance was generally the least strong for the MVaRP. This result is in line with the characteristic of this portfolio, since it is designed for stability and avoidance of extremes. In contrast, the RORAC-Max portfolio is designed to maximise extreme returns and it does have an outperformance in all variants, yet was subject to more volatility also. It should be noted that with this portfolio even variant c), which gives sustainability a weight of 75%, is not financially inferior to the benchmark. The highest volatility of financial performance had the S-Max portfolio, yet since performance is no primary objective here, this result is in line with its character. In average it still

had an equal or better performance than the benchmark, especially so in variant a). Concerning sustainability performance, all target portfolios have a higher SRI-rating than the benchmark, proving the qualification of the framework with regard to the improvement of portfolio sustainability.

This leads to the ultimately most important step of evaluation, namely the combined analysis of both performance results. The objective of the synthesis of conventional portfolio selection and sustainable investment is to achieve an adequate result at least comparable to the benchmark with respect to both risk/return-performance and the level of portfolio sustainability. Altogether the framework presents itself as a viable instrument that can be individually calibrated to the financial and sustainability-related objectives of the investor. Here the S-Max portfolio of variant a) seems to be especially attractive in the period of analysis. It produces a sound excess with respect to both objectives. Yet the analysis of the other two variants makes transparent, that while a high sustainability preference reliably reaches that target, financial performance will decrease. This is not due to any fundamental correlation of the two but inherent in the mechanics of the optimisation algorithm: with increasing weight on the selection of high SRI-ratings the risk/return-diversification becomes negligible. This fact should be considered when calibrating the sustainability preference, which otherwise should be adapted to the wishes and investment objectives of any individual investor.

As a final step of the analysis and a test for the robustness of the results, the key figures were also computed only from the extremely negative phases as well as the normal market phases. They are given below.

The differentiation to market phases confirms the results with regard to sustainability. With regard to financial performance it becomes transparent that the outperformance of the benchmark can be observed in the fall phases, while it is often not given in normal phases. Since this is especially pronounced for the portfolio with the highest sustainability, it gives credit to the assumption of a stabilising effect of sustainability in stock portfolios.

In spite of a generally high relevance of these results for the praxis of sustainable investment the usability of the presented framework in its current form has to be considered with caution. Neither transaction costs nor aspects of taxation were included in the optimisation. While this is a necessary simplification and usually applied, it could change the attractiveness of the regrouping of portfolio shares. In the practical implementation of the approach it would therefore be advisable, that the re-alignment of the portfolio is only carried out if the expected excess performance (RORAC+) exceeds the transaction cost relative to the invested capital.

Figure 4. Performance results differentiated to market-phases

		Normal Market-Phases				Fall Market-Phases			
DAX									
Variants	RORAC		S		RORAC		S		
All	9,07%		57,97		-17,28%		60,46		
MVaRP									
Variant	RORAC	RORAC+	S	S+	RORAC	RORAC+	S	S+	
a ($\lambda = 0,25$)	12,47%	3,40%	60,36	2,39	-13,22%	4,05%	65,94	5,48	
b ($\lambda = 0,5$)	6,44%	-2,63%	64,28	6,31	-17,88%	-0,61%	67,40	6,94	
c ($\lambda = 0,75$)	8,87%	-0,20%	65,61	7,64	-12,94%	4,34%	68,96	8,49	
RORAC-Max									
Variant	RORAC	RORAC+	S	S+	RORAC	RORAC+	S	S+	
a ($\lambda = 0,25$)	13,00%	3,93%	64,58	6,61	0,88%	18,16%	68,72	8,26	
b ($\lambda = 0,5$)	8,09%	-0,98%	69,74	11,77	-1,49%	15,79%	71,74	11,28	
c ($\lambda = 0,75$)	6,46%	-2,61%	73,04	15,06	-4,92%	12,36%	75,14	14,67	
S-Max									
Variant	RORAC	RORAC+	S	S+	RORAC	RORAC+	S	S+	
a ($\lambda = 0,25$)	9,93%	0,86%	69,51	11,54	6,12%	23,40%	72,98	12,51	
b ($\lambda = 0,5$)	5,53%	-3,54%	72,30	14,33	-1,18%	16,10%	73,92	13,46	
c ($\lambda = 0,75$)	5,61%	-3,46%	74,96	16,99	-7,55%	9,73%	76,25	15,79	

7. Summary and conclusion

In this paper a framework was proposed for a synthesis of conventional and sustainable portfolio selection. It is based on the theories of MCDM and was as laid down conceptually and empirically using the DAX as IOS and benchmark. In the empirical analysis importance was attached to the compliance with regulatory demands of the banking supervision in order to avoid results that cannot be replicated in the reality of portfolio investment.

The results show first and foremost the general advantages of the use of the framework of modern portfolio theory since the optimisation leads to considerable financially superior results in comparison with the benchmark. This result is in line with the results of other empirical tests of portfolio theory. In addition to these the results of this analysis make transparent, that the synthesis with sustainable investment does support to pursue financial objectives and sustainability related objectives at the same time. Here the three-dimensional optimisation proves to be viable, especially since it allows for an individual calibration of the weights given to both types of objectives by the investor. In

view of the investor classification presented in the introduction the method is therefore in line with the investment objectives of rational investors and of consumption investors, for whom sustainability criteria are important but not exclusively so. Yet before it can be implemented in the reality of investing, further research regarding restrictions and factors of influence has to be done.

Bibliography

- Adler T., Kritzman M., The Cost of Socially Responsible Investing, „The Journal of Portfolio Management”, 2008, Vol. 35, No. 1, 52–56.
- Alba E., (Editor), Optimization techniques for solving complex problems. Hoboken, N.J: Wiley 2009.
- Amram M., Kulatilaka N., The Invisible Green Hand. How Individual Decisions And Markets Can Reduce Greenhouse Gas Emissions, „California Management Review”, 2009, Vol. 51, No. 2, 194–218.
- Ballesterio E., Approximating the optimum portfolio for an investor with particular preferences, „Journal of the Operational Research Society”, 1998, Vol. 49, No. 9, 998–1000.
- Bamberg G., Neuhierl A., Kann das Minimumvarianz-Portfolio eine bessere Performance als der Aktienindex besitzen?, „Die Betriebswirtschaft”, 2008, Vol. 68, No. 6, 637–649.
- Bana E Costa C. A., Soares J. O., A multicriteria model for portfolio management, „The European Journal of Finance”, 2004, Vol. 10, No. 3, 198–211.
- Baule R., Bedke N., Zur Korrelation von Aktienkursen am deutschen Kapitalmarkt, „FinanzBetrieb”, 2008, Vol. 10, No. 7–8, 548–555.
- Beal D. J., Goyen M., Phillips P., Why Do We Invest Ethically?, „The Journal of Investing”, 2005, Vol. 14, No. 3, 66–77.
- Black F., Litterman R., Global Portfolio Optimization, „Financial Analysts Journal”, Vol. 48, No. 5, 28–43.
- Bogle J. C., A Question So Important that it Should Be Hard to Think about Anything Else, „The Journal of Portfolio Management”, 2008, Vol. 34, No. 2, 95–102.
- Bruns C., Meyer-Bullerdiek F., Professionelles Portfoliomanagement. Aufbau, Umsetzung und Erfolgskontrolle strukturierter Anlagestrategien. Stuttgart 2000, Schaffer-Poeschel 2. edition.
- Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin) Merkblatt – Unterlagen für die Prüfung der Eignung eines eigenen Risikomodells, 2002, date of access 18.09.2010, http://www.bafin.de/cln_179/nn_722552/SharedDocs/Veroeffentlichungen/DE/Service/Merkblaetter/mb__020715__risikomodellpruefung.html?__nnn=true.

- CFA Institute, Environmental, Social and Governance Factors at Listed Companies. A Manual for Investors, 2008, date of access 11.09.2010, <http://www.cfapubs.org/doi/pdf/10.2469/ccb.v2008.n2.1>
- Deb K., Multi-objective optimisation using evolutionary algorithms, Chichester: Wiley, 2008.
- Deutsche Börse Group, DAX. Der Top-Index der Deutschen Börse, 2008, date of access 11.07.2010, <http://www.dax-indices.com/DE/MediaLibrary/Document/Fact%20Sheet%20DAXDeutsch%201208.pdf>
- Deutsche Börse Group, Historical Index Compositions of the Equity- and Strategy-Indices of Deutsche Börse. Version 3.18, June 2010, date of access 11.07.2010, http://www.dax-indices.com/DE/MediaLibrary/Document/Historical_Index_Compositions_3_18.pdf
- diBartolomeo D., Kurtz L., Managing Risk Exposures of Socially Screened Portfolios, Boston 1999, Northfield Information Services.
- Dimitcheva L., Morrison G., Marsland J., Boxing against Green Shadows. Creation of a shadow benchmark makes SRI portfolios more efficient and easier to manage, Frankfurt am Main, 2002, Commerzbank AG.
- Donohue C., Yip K., Optimal Portfolio Rebalancing with Transaction Costs, „The Journal of Portfolio Management”, 2003, Vol. 29, No. 4, 49–63.
- Ehrgott M., Klamroth K., Schwehm C., An MCDM approach to portfolio optimization, „European Journal of Operational Research”, 2004, Vol. 155, No. 3, 752–770.
- Ernst & Young, Business Risk Report. The Top 10 Risks for Global Business, 2009, date of access 13.09.2010, [http://www.eoy-award.com/Publication/vwLUAssets/EY_Strategic_Business_Risk_Report_2009/\\$FILE/Ernst%20%20Young%20report_StrategicBusiness_Risk2009.pdf](http://www.eoy-award.com/Publication/vwLUAssets/EY_Strategic_Business_Risk_Report_2009/$FILE/Ernst%20%20Young%20report_StrategicBusiness_Risk2009.pdf)
- Fabozzi F. J., Investment management. Instructor’s manual with solutions, Upper Saddle River, 1999, NJ: Prentice Hall 2. edition.
- Fischer B. R., Performanceanalyse in der Praxis. Performancemaße, Attributionsanalyse, DVFA-Performance Presentation Standards, München 2001, Oldenbourg 2. edition.
- Forum Nachhaltige Geldanlagen (FNG), Marktbericht nachhaltige Geldanlagen 2010. Deutschland, Österreich und die Schweiz, 2010, date of access 9.09.2010, http://www.forum-ng.org/images/stories/nachhaltige_geldanlagen/statusbericht_fng_2010_72dpi.pdf
- Gabriel K., Nachhaltigkeitsindizes. Die Bewertung von Unternehmen nach sozialen und ökologischen Kriterien und die Einschätzung des Marktes für nachhaltige Geldanlage aus der Sicht der Anbieter von Nachhaltigkeitsindizes, Frankfurt am Main 2005, IKO.

- Geczy C. C., Stambaugh R. F., Levin D., Investing in Socially Responsible Mutual Funds, Discussion paper of the University of Pennsylvania, 200d, date of access 03.04.2007, ftp://papers.ssrn.com/sol3/papers.cfm?abstract_id=416380
- González-Hermosillo B., The Role of International Investors' Risk Appetite in Global Financial Crises 1998–2007, Washington: International Monetary Fund Working Paper, 2008.
- Gramlich D., Peylo B. T., Staaden M., Effiziente Portefeuilles im μ -VaR-Raum, *Die Bank*, 1999, Vol. 29, No. 6, 422–425.
- Gramlich D., Peylo B. T., Portfolio Selection auf Basis des Value-at-Risk, *Betriebswirtschaftliche Forschung und Praxis*, 2000, Vol. 52, No. 5, 507–521.
- Grunwald A., Kopfmüller J., Nachhaltigkeit. Frankfurt am Main, Campus, 2006.
- Hallerbach W. G., Spronk J., The relevance of MCDM for financial decisions, „*Journal of Multi-Criteria Decision Analysis*”, 2002, Vol. 11, No. 4/5, 187–195.
- Haugen R. A., Modern investment theory, Upper Saddle River, N.J: Prentice Hall, 2001, 5. edition.
- Jondeau E., Rockinger M., Optimal Portfolio Allocation under Higher Moments, „*European Financial Management*”, 2006, Vol. 12, No. 1, 29–55.
- Jorion P., Value at Risk. The new benchmark for controlling market risk, New York 1997, McGraw-Hill.
- Kleeberg J. M., Risikominimale Strategie am Aktienmarkt, *Die Bank*, 1993, Vol. 23, No. 3, 160–164.
- Kleeberg J. M., Rendite und Risiko des Minimum-Varianz-Portfolios, *Österreichisches Bankarchiv*, 1996, Vol. 44, No. 8, 587–594.
- Köksalan M., Multiobjective Combinatorial Optimization: Some Approaches, „*Journal of Multi-Criteria Decision Analysis*”, 2009, Vol. 15, No. 1/2, 69–78.
- Köllner T., Weber O., Sustainability Rating. Analysis and Rating of Investment Funds, 2005, GOE Report No. 1–, Thalwil: GOE – Gesellschaft für Organisation und Entscheidung.
- Konno H., Wijayanayake A., Portfolio optimization problem under concave transaction costs and minimal transaction unit constraints, *Mathematical Programming*, 2000, Vol. 89, No. 2, 233–250.
- Kurtz L., Answers to Four Questions, „*The Journal of Investing*”, 2005, Vol. 14, No. 3, 125–139.
- Markowitz H. M., Portfolio Selection, „*Journal of Finance*”, 1952, Vol. 7, No. 1, 77–91.
- Markowitz H. M., The Optimization of a Quadratic Function Subject to Linear Constraints, „*Naval Research Logistics Quarterly*”, 1956, No. 3, 111–133.
- Markowitz H. M., Portfolio selection. Efficient Diversification of Investments, Cambridge 1998, Mass., Blackwell 2. edition.

- Mauritz C., Wilhelm A., Licht und Schatten – die Nachhaltigkeitsleistungen deutscher Großunternehmen. Ergebnisse des ersten vergleichenden Nachhaltigkeitsratings der DAX 30 Unternehmen, Hannover 2003, Scoris.
- Mauritz C., Wilhelm A., Die Nachhaltigkeitsleistungen deutscher Großunternehmen. Ergebnisse des zweiten vergleichenden Nachhaltigkeitsratings der DAX 30 Unternehmen, 2005, date of access 18.09.2010, http://www2.wiwi.hu-berlin.de/institute/im/csr/_docs/publicDownloads/scoris_2005_Ranking_dax30.pdf
- Milevsky M. A., Aziz A., Goss A., Comeault A. T., Wheeler D., Cleaning a passive Index: How to use portfolio optimisation to satisfy CSR constraints, „The Journal of Portfolio Management”, 2006, Vol. 32., No. 3, 110–118.
- Minor D. B., Finding the Cost of Socially Responsible Investing, „The Journal of Investing”, 2007, Vol. 16, No. 3, 54–70.
- Pardalos P. M., Sandström M., Zopounidis C., On the use of Optimization Models for Portfolio Selection: A Review and some computational Results, „Computational Economics”, 1994, Vol. 7, No. 4, 227–244.
- Peterson R. L., Buy on the Rumor: Anticipatory Affect and Investor Behavior, „Journal of Behavioral Finance”, 2002, Vol. 3, No. 4, 218–226.
- Peylo B. T., Schaltegger S., Nachhaltiges Investment als Beitrag zur Markteffizienz. Eine Lehre aus der Finanzmarktkrise, „Betriebswirtschaftliche Blätter”, 2009a, Vol. 58, No. 2, 104–110.
- Peylo B. T., Schaltegger S., Impulse für das Management von Nachhaltigkeitsfonds. Nachhaltiges Investment unter der Lupe, „Betriebswirtschaftliche Blätter”, 2009b, Vol. 58, No. 8, 441–449.
- Pinner W., Ethische Investments. Rendite mit “sauberen” Fonds, Wiesbaden 2003, Gabler 1. edition.
- Plinke E., Nachhaltigkeit und Aktienperformance. Alte und neue Erkenntnisse zu einem Dauerbrenner, 2008, date of access 13.09.2010, http://www.sarasin.ch/internet/iech/performancestudie_2008-2.pdf
- Prakash A. J., Chang C.-H., Pactwa T. E., Selecting a portfolio with skewness: Recent evidence from US, European, and Latin American equity markets, „Journal of Banking & Finance”, 2003, Vol. 27, No. 7, 1375–1390.
- Qi Y., Hirschberger M., Steuer R. E., Dotted Representations of Mean-Variance Efficient Frontiers and their Computation, „INFOR Journal”, 2009, Vol. 47, No. 1, 15–21.
- Rappaport A., The Economics of Short-Term Performance Obsession, „Financial Analysts Journal”, 2005, Vol. 61, No. 3, 65–79.
- Robeco & Booz&Co., Responsible Investing: A Paradigm Shift. From Niche to Mainstream, 2008, date of access 13.09.2010, http://www.booz.com/media/file/White_Paper_A_Paradigm_Shift.pdf
- Roy A. D., Safety first and the holding of assets, „Econometrica”, 1952, Vol. 20, No. 3, 431–449.

- Schäfer H., Triple Bottom Line Investing – Ethik, Rendite und Risiko in der Kapitalanlage, „Zeitschrift für das gesamte Kreditwesen“, 2001, Vol. 54, No. 13, 740–744.
- Schäfer H., Beer J., Zenker J., Fernandes P., Who is who in Corporate Social Responsibility Rating? A Survey of internationally established Rating Systems that measure Corporate Responsibility, 2006, date of access 13.09.2010, http://www.bertelsmannstiftung.de/bst/de/media/xcms_bst_dms_18175_18176_2.pdf.
- Schaltegger S., Burritt R., Petersen H., An Introduction to corporate environmental management. Striving for sustainability, Sheffield 2003, UK, Greenleaf Publishing.
- Schaltegger S., Wagner M., (Editor), Managing the business case for sustainability. The integration of social, environmental and economic performance, Sheffield 2006, UK, Greenleaf Publishing.
- Spremann K., Vermögensverwaltung, München, Oldenbourg 1999.
- Spremann K., Portfoliomanagement, München, Oldenbourg 2006, 3. edition.
- Statman M., Normal Investors, Then and Now, „Financial Analysts Journal“, 2005, Vol. 16, No. 2, 31–37.
- Steiner P., Uhlir H., Wertpapieranalyse. Heidelberg, Physica, 2001, 4. edition.
- Steuer R. E., Qi Y., Hirschberger M., Portfolio Optimization: New Capabilities and Future Methods, „Zeitschrift für Betriebswirtschaft (ZfB)“, 2006, Vol. 76, No. 2, 199–219.
- Steuer R. E., Qi Y., Hirschberger M., Suitable-portfolio investors, nondominated frontier sensitivity and the effect of multiple objectives on standard portfolio selection, „Annals of Operations Research“, 2007, Vol. 152, No. 1, 297–317.
- Steuer R. E., Qi Y., Hirschberger M., Portfolio Selection in the Presence of Multiple Criteria, in: C. Zopounidis, M. Doumpos, P. M. Pardalos (Editor), Handbook of Financial Engineering, Boston 2008, MA: Springer US, 3–24.
- Stone B. A., Social Responsibility and Institutional Investment. An Empirical Analysis of the Environmental Screen, „The Journal of Investing“, 2000, Vol. 9, No. 3, 81–94.
- Sustainalytics GmbH, Die Nachhaltigkeitsleistungen deutscher Großunternehmen. Ergebnisse des vierten vergleichenden Nachhaltigkeitsratings der DAX 30 – Unternehmen 2009, date of access 18.09.2010, http://sustainalytics.com/sites/default/files/Sustainalytics_DAX_30_Studie_2009.pdf
- Thaler R. H., Advances in behavioral finance, New York 1993, NY: Russell Sage Foundation.
- Theiler U., Optimierungsverfahren zur Risk-, Return-Steuerung der Gesamtbank, Wiesbaden 2002, Deutscher Universitäts-Verlag.
- Tobin J., Liquidity Preference as Behavior Towards Risk, „Review of Economic Studies“, 1958, Vol. 25, No. 58, 65–86.

- Troutman M. L., Risk Control Techniques for Social Investing, „The Journal of Investing”, 2001, Vol. 10, No. 4, 51–57.
- Uhlenbrock B., Financial markets‘ appetite for risk, Frankfurt am Main, 2009, Deutsche Bundesbank Discussion Paper 2009/08.
- Uhlmann I., Worauf Investoren achten müssen, „Die Bank”, 2009, Vol. 39, No. 2, 14–18.
- Universität Karlsruhe, Abteilung Finanzmärkte und Informationen – Karlsruher Kapitalmarktdatenbank (KKMDB), 2007, date of access 01.01.2011, <http://fmi.fbv.uni-karlsruhe.de/149.php>
- Wallenius J., Dyer J. S., Fishburn P. C., Steuer R. E., Zionts S., Deb K., Multiple Criteria Decision Making, Multiattribute Utility Theory: Recent Accomplishments and What Lies Ahead, „Management Science”, 2008, Vol. 54, No. 7, 1336–1349.
- Wilhelm A., Die Nachhaltigkeitsleistungen deutscher Großunternehmen. Ergebnisse des dritten vergleichenden Nachhaltigkeitsratings der DAX 30 Unternehmen, Hannover 2007, Scoris.

Summary

Maria Aluchna

Executive compensation. Challenges after the 2007–2009 Crisis

The corporate practice of executive compensation in recent years gives rise to the thorough consideration of effectiveness of this motivational mechanism in public listed companies. The examples from before the crisis of granting high remuneration packages and sometimes the glaring lack of connection between executive pay with company performance contributed to the interest in new solutions in this area. Though at the beginning of the discussion about the future of managerial compensation, the dominating factors were indignation and willingness to reduce remuneration considerably; this approach gave way to serious reforms and proposals for the improvement of the situation. The debate on the size and structure of executive pay has been carried out for a long time and is the subject of many interesting empirical studies that use the latest statistical and econometric tools. However, the major subject of debates focuses on two basic groups – authors appealing for stricter control of executive pay and limitation in the amounts as well as research and practitioners pointing to the significance of market mechanisms in the process of the managerial compensation construction. The solutions suggested recently are placed in between these extreme approaches and constitute an important element of the improvement of supervision systems.

Anna Dąbrowska, Mirosława Janoś-Kresło

Consumer Behaviour on Selected E-Service Markets in Central and Eastern European Countries. Research Results

The development of modern information and communications technologies, and of the Internet in particular, is having a major impact on the changes in the processes of running business. Together with the development of the Internet, the market for services has been changing, bringing about new possibilities of delivering services, as more and more activities can be performed on-line. Also the consumer requirements are changing, as they expect a more interesting scope of service portfolios, which are better adapted to their needs.

The purpose of this article is to present the changes in the consumer behaviours that have been taking place in the selected e-services market in the countries of Central and Eastern Europe, based on the results of research carried out in Estonia, Lithuania, Latvia, Poland and the Ukraine. On its basis, it was possible to determine the differences in the level of access to modern information and communications technologies and in the development of e-services and their use in the researched countries.

Paweł Felis

The Financial Independence of Local Self-Government Units in the Acquisition of Sources to Finance Their Activity – The challenges for Self-Government Theory and Practice

This present dissertation focuses on the selected issues of the decentralisation of public finance and the independence of local self-government units (JST). Two basic ideas of JST independence have been presented: financial and legal problems to determine the scope of operation and the real possibilities of tasks implemented by them. It emphasises the significance of tax administrative power, which is an indicator of the decentralisation of public authority. At first, there is a review of the after-effects of the delegation of tax administrative power to local authorities, then there is a diagnosis of their competence possibilities within the use of tax policy instruments. The deliberations enabled the formulation of a few general conclusions so as to put forward recommendations on the construction of the ultimate solutions within the system of financial funding of local self-government units.

Rafał Mrówka

Hyperarchy as a New Model of Organisation

The article analyses the creation of a hyperarchical organisation, i.e. an organisation without rigid limitations and the hierarchy based on the use of the creative potential network of units focused around a goal-project-idea, which is subject to evolution, gets out of control and may evolve in an indefinite direction. There is a new type of organisation without formal members, where the basis of exchange is not money but other values attracting members, where the possibilities of traditional control are slight. The author shows the advantages and disadvantages of this type of model and possibilities of its practical application.

Bogdan Mróz

Migration into the Shadow: Unregistered Work in Poland

The paper focuses on the causes, dynamics and consequences of the existence and development of the informal labour market in Poland. It is based on recent research findings, including a nation-wide survey on unregistered work conducted in 2009 by the Polish Central Statistical Office (GUS). The author makes an attempt to provide an overview of basic issues related to the informal labour market in Poland and its social and economic implications.

Benjamin Tobias Peylo

Integration of Sustainability into Modern Portfolio Theory

As the modern world is facing economic limits and an increase in ecological and social problems, the need for innovative and sustainable solutions becomes more pressing. This has consequences for the investment market, where the integration of sustainability-related objectives becomes an important development. Yet investment

theory and especially modern portfolio theory does not allow the consideration of other criteria than return and risk.

In this paper, a method is proposed that enhances Markowitz' modern portfolio theory and allows the investor to define a flexible degree of sustainability as an additional optimisation-criterion in the portfolio selection process. The method is applied to the investment universe of the German stock-index DAX and analysed empirically over the period 2003–2010. The observed effects are compared both in terms of achieved performance and the degree of sustainability with the DAX as a benchmark.

The results show that the three-dimensional optimisation as a possible synthesis of portfolio theory and sustainable investment can achieve good results with respect to both financial and sustainability objectives, and that it forms a good starting basis for a further and more detailed elaboration.