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This issue of the International Journal of Management and Economics opens with an article titled, “An attempt to assess the quantitative impact of institutions on economic growth and economic development” by Mariusz Próchniak. In his interesting and innovative study, the author assesses the influence of institutional environment on worldwide differences in economic growth and economic development. The institutional indicators taken into consideration were economic freedom (Heritage Foundation and Fraser Institute), the governance indicator (World Bank), the democracy index (Freedom House), and the EBRD transition indicator for post-socialist countries. The empirical analysis concerns 180 countries. The data collected cover the period 1993-2012. The author confirmed the quality of institutional environment had a large positive impact on the level of economic development. Furthermore, “the positive link has been evidenced for all five institutional indicators”. The paper contributes to the institutional economy literature by applying the institutions-augmented Solow model. The author concedes that the model “performs slightly poorer in explaining differences in the rates of economic growth: only one institutional variable (index of economic freedom) has a statistically significant impact on economic growth”.

The next study concerns the activities of large Chinese corporations on the international scene. In his article, “Effects of cross-border mergers and acquisitions by Chinese multinational companies”, Artur Klimek investigates the most substantial cases of cross-border mergers and acquisitions by Chinese companies. As a rule they are controlled by the central or regional governments. In his in-depth study he analyzes the introductory preparation processes undertaken by the firms as well as the results of the deals. He found that all the deals were well prepared and targeted towards achieving strategic goals. Even more important, the goals were usually long-term, and not only economic but also political in character.

The next three papers are grounded in management discipline and cover current issues of interest to managers. The paper “Motives for multisourcing in the IT sector” by Barbara Łoboda describes the multisourcing phenomenon with a focus on the IT
industry. The topic is of particular importance in the era of IT market globalization. Disappointed with large IT contracts, companies have begun to multisource by splitting the contracts into smaller ones in order to choose the best suppliers. Multisourcing is an answer to the requirement of cooperation flexibility and dynamics, knowledge sharing, specialization, high-quality service, and reduced risk. These requirements are especially important in times of economic slowdown. There are various motives for multisourcing and various expectations of companies that influence cooperation between the parties.

The article by Justyna Szewc on “Selected success factors of virtual teams – literature review and suggestions for future research” focuses on the question of success factors of virtual teams. In the author’s opinion, team building, trust, communication, and leadership are of exceptional importance in successfully managing virtual teams characterized by physical distance between parties, which makes face-to-face contact impossible. She points out that in spite of the growing popularity of virtual teams, the research on managing them is still scarce.

The next article, “The effects of corporate social responsibility initiatives and price premiums on Polish consumers’ responses: an experimental study” by Piotr Wójcik, is a reply to my invitation for submissions on CSR. I hope this is just the beginning of a discussion on the subject. Based on an extensive literature review, the author designed and executed empirical research on yogurt consumers (who were Polish university students), investigating their perceptions of the product value and intention to buy in the context of CSR. He found out that the consumers were generally sensitive to CSR activities, though the reaction was stronger in the cases of CSR initiatives related to a firm’s core business in comparison to non-related CSR initiatives. In addition, the consumers declared certain trade-offs between functional and social attributes.

This issue closes with a viewpoint article, “Open pension funds in Poland: the effects of the pension privatization process” by Leokadia Oręziak, on the very important matter of pension systems. The focus is on pension privatization through the introduction of a mandatory capital pillar directing funds to Open Pension Funds (OPFs). The paper analyzes the pension systems’ operations in various regions and countries. The author concludes that the mandatory capital pillar in Poland’s system and in the systems of some other Central and Eastern European countries is a risky solution from at least two points of view. First, pensioners’ benefits seem illusive. Moreover, the change negatively influences public finances, causing an increasingly higher threat to the solvency of countries. I believe that the importance of the problem will persuade other authors to take part in the discussion on this topic.

I anticipate that you will find the articles both informative and useful.
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**An attempt to assess the quantitative impact of institutions on economic growth and economic development**

**Abstract**

This study aims at assessing to what extent institutional environment is responsible for worldwide differences in economic growth and economic development. To answer this question, we use an innovative approach based on a new concept of the institutions-augmented Solow model which is then estimated empirically using regression equations. The analysis covers 180 countries during the 1993–2012 period. The empirical analysis confirms a large positive impact of the quality of institutional environment on the level of economic development. The positive link has been evidenced for all five institutional indicators: two indices of economic freedom (Heritage Foundation and Fraser Institute), the governance indicator (World Bank), the democracy index (Freedom House), and the EBRD transition indicator for post-socialist countries. Differences in physical capital, human capital, and institutional environment explain about 70–75% of the worldwide differences in economic development. The institutions-augmented Solow model, however, performs slightly poorer in explaining differences in the rates of economic growth: only one institutional variable (index of economic freedom) has a statistically significant impact on economic growth. In terms of originality, this paper extends the theoretical analysis of the Solow model by including institutions, on the one hand, and shows a comprehensive empirical analysis of the impact of various institutional indicators on both the level of development and the pace of economic growth, on the other. The results bring important policy implications.

**Keywords:** economic development, economic growth, institutions, economic freedom, Solow model
Introduction

There are many factors that affect the pace of economic growth and the level of economic development, both from the theoretical and empirical perspective. Using one of the classifications, the factors can be divided into two groups: the demand-side and the supply-side determinants. The first group encompasses the components of aggregate demand, i.e. investment expenditures, government spending on goods and services, and net exports (consumption may be omitted because it is not an autonomous factor due to its direct dependence on output). The second group of factors includes the supply-side determinants which affect potential output; among these variables one may include physical capital, human capital, labor, and technology. Of course, both demand-side and supply-side variables can be more disaggregated, including various types of investments or government spending, or many more types of capital. All these factors (both demand-side and supply-side) can be called direct ones because they immediately transform expenditures or inputs into output.

Economic growth and economic development both depend, however, not only on these direct determinants but also on deep factors of production. Deep factors affect direct determinants and in this way they influence macroeconomic performance. Deep determinants are institutions that allow for interactions between output and measurable inputs.

The role of institutions in the process of economic growth and economic development is enormous. However, when assessing the impact of institutions on economic growth, the following questions or problems arise: first, which institutions are the most important growth factors; and second, how to measure institutions quantitatively in order to include them in empirical studies. The difficulty in answering these questions implies that there is still much room for theoretical and empirical studies that examine the relationship between institutions and economic growth.

The term ‘institution’ is very broad. There are a huge (perhaps almost infinite) number of variables that represent some kinds of institutions. For example, Sulejewicz [2009] provides many different concepts of institutions. Persson [2010] states that institutions are the rules of the game; some are upheld by law, others by mutual and spontaneous consent and a few by the (brute) force of privileged elites. Some institutions are informal, such as trust and commitment, while others—the limited liability corporation for example—needed coordinated action by lawmakers to get established. Rodrik [2007] points out that markets require institutions such as property rights, regulatory institutions (regulating conduct in goods, services, labor, assets, and financial markets), fiscal and monetary institutions for macroeconomic stabilization, institutions for social insurance, and institutions of conflict management (e.g. rule of law, a high-quality judiciary, representative political institutions, free elections, independent trade unions, social partnerships, and institutionalized representation of minority groups).
Hence, it is impossible to analyze in one empirical or theoretical study all the variables that may be treated as institutions. It is necessary to focus on a subset of them. Such an approach is applied in this study. The important role of institutions in the process of economic growth and economic development is also indicated by Wojtyna [2002, 2007] and Rapacki [2009].

Research hypotheses and the objectives of the paper refer to the following aspects. The first aim of the paper is to extend the neoclassical growth model to include institutions. Second, the study aims at assessing empirically the impact of institutions on economic development of the countries in the world. Third, the paper examines the empirical impact of institutions on the worldwide level of economic growth. Our fourth goal is to estimate the production function based on these results.

Since it is impossible to include in one empirical analysis all the possible types of institutions, it is necessary to introduce some constraints as to the number and the type of institutional indicators. Hence, the study focuses on the following indices that represent various areas of institutional environment: index of economic freedom, governance indicator, democracy index, and transition indicator. Economic development is measured by the level of GDP per capita at PPP while economic growth is its growth rate. Our study covers 180 countries but the particular models may be estimated based on a lower number of countries, depending on data availability.

The paper is composed of five points. In the following point, which appears after the introduction, we present the methodology by providing a concise description of the Mankiw-Romer-Weil model and the institutions-augmented Solow model, and we review the literature, describing other selected empirical studies on institutions-growth nexus. The next section describes the data used. Then, the results of the analysis are presented and discussed. The last point is the conclusion.

Background

The standard Solow model (1956) includes only one type of capital, according to the following production function: \( Y = F(K, L, A) \), where \( Y \) denotes output, \( K \) – physical capital, \( L \) – labor, \( A \) – technology. Mankiw, Romer, and Weil [1992] extended the Solow model by introducing human capital \( (H) \), with the following production function: \( Y = F(K, H, L, A) \). Nonneman and Vanhoudt [1996] further extended the Solow model, adding more types of capital; in empirical analysis they examined the model with three types of capital: physical capital, human capital, and technological know-how.

However, the value added of introducing more and more types of capital is diminishing, in our opinion. This results from the fact that economic growth and economic development both depend not only on direct factors, but also on deep determinants
related to institutional environment. Thus, we propose extension of the macroeconomic production function in a way similar to that of Nonneman and Vanhoudt, but we argue that institutions should be included as new factors of production, and not different types of capital. Namely, following the initial study made by Próchniak [2013], we use the production function of the form: \( F(K, H, L, A, I) \), where \( I \) is the qualitative index that measures the institutional environment. This approach is also shared by some other authors (e.g. [Hall and Jones, 1999]; [Eicher, García-Peñalosa, and Teksoz, 2006]), but in their works the introduction of institutional indicator is slightly different and/or the model is tested empirically under different assumptions.

(a) Theoretical background

In this section we compare the Solow model extended for human capital, i.e. the Mankiw-Romer-Weil (MRW) model, with our own concept of the institutions-augmented Solow model. For the sake of conciseness, only the most important assumptions and implications are presented here; some issues are examined more deeply by Próchniak [2013].

The MRW model assumes the following production function of the Cobb-Douglas form: \( Y = K^\alpha H^\beta (AL)^{1-\alpha - \beta} \), where \( \alpha > 0, \beta > 0, \alpha + \beta < 1 \). This function exhibits constant returns to all the three inputs (physical capital, human capital, and effective labor) and the diminishing marginal product of both physical and human capital. Output may be devoted to consumption, accumulation of physical capital, or accumulation of human capital. The level of technology and the number of population both grow at constant exogenous rates: \( a \) and \( n \). Let \( s_K \) be the investment rate in physical capital (i.e. the savings rate), and \( s_H \) the investment rate in human capital. Both types of capital depreciate at the same rate \( \delta \). Physical capital, human capital, and output per unit of effective labor, denoted by \( k(t) \), \( h(t) \), and \( f(k(t), h(t)) \), are defined as:

\[
\begin{align*}
  k &= \frac{K}{AL} ; \\
  h &= \frac{H}{AL} ; \\
  y &= f(k, h) = \frac{F(K, H, AL)}{AL}
\end{align*}
\]  

(1)

In order to find equations describing the behavior of the economy, we differentiate the definitions of \( k \) and \( h \) with respect to time. It yields:

\[
\begin{align*}
  \dot{k} &= s_K y - (n + \delta)k = s_K k^\alpha \dot{h}^\beta - (n + a + \delta)k \\
  \dot{h} &= s_H y - (n + \delta)h = s_H h^\alpha k^\beta - (n + a + \delta)h
\end{align*}
\]  

(2)

The above equations are the basic equations describing the dynamics of the economy in the MRW model. The increase of capital per unit of effective labor equals actual investment net replacement investment. Based on the above formulas we can calculate the steady state, at which both types of capital and output per unit of effective labor are all constant. Setting (2) and (3) to zero, we can calculate the amount of physical capital \( (k^*) \), human capital \( (h^*) \), and output \( (y^*) \) in the steady state:
An attempt to assess the quantitative impact of institutions on economic growth…

Since output per unit of effective labor is equal to per capita GDP divided by the level of technology, then from (4) we can calculate the steady-state value of per capita output:

\[ \frac{Y}{L} = A \left( \frac{s_k}{n + a + \delta} \right)^{\alpha - \beta} \left( \frac{s_h}{n + a + \delta} \right)^{\beta} \]  

(5)

The above equation indicates the determinants of economic development in long-run equilibrium according to the MRW model. Per capita income depends, among other factors, on the savings rate, the investment rate in human capital, and population growth. The relationship between the level of economic development and the accumulation of physical and human capital is positive, while that with the growth rate of population is negative. Formula (5), after taking logs, yields:

\[ \ln \left( \frac{Y}{L} \right) = \ln A + \frac{\alpha}{1 - \alpha - \beta} \ln s_k + \frac{\beta}{1 - \alpha - \beta} \ln s_h - \frac{\alpha + \beta}{1 - \alpha - \beta} \ln (n + a + \delta) \]  

(6)

Estimating equation (6) allows us to find the determinants of economic development.

To find the determinants of economic growth, we assume that the countries are not in the steady state. Then, we carry out log-linearization of the equations describing the dynamics of the economy. After taking logarithms and time derivatives of the production function \( y = k^\alpha h^\beta \) and using (2) – (3), we get the growth rate of output per unit of effective labor:

\[ \ln y = \alpha s_k k^{-1} h^\beta + \beta s_h h^{-1} \ln s_h - (\alpha + \beta)(n + a + \delta) \]  

(7)

Then we apply the first-degree Taylor extension around the steady state to find the approximate time path for \( \ln y \):

\[ \ln y = \ln y^* + \frac{d \ln y}{d \ln k} \bigg|_{steady\ state} \times (\ln k - \ln k^*) + \frac{d \ln y}{d \ln h} \bigg|_{steady\ state} \times (\ln h - \ln h^*) \]  

(8)

Calculating the respective derivatives and using the fact that steady state values for \( k \) and \( h \) are given by (4), from (8) we get:

\[ \ln y = -\alpha(1 - \alpha - \beta)(n + a + \delta)(\ln k - \ln k^*) - \beta(1 - \alpha - \beta)(n + a + \delta)(\ln h - \ln h^*) \]  

(9)

Defining:

\[ \lambda = (1 - \alpha - \beta)(n + a + \delta) > 0, \]  

(10)
equation (9) can be expressed as:

\[ \frac{\dot{y}}{y} = \lambda (\ln y^* - \ln y) \]  

Equation (11) informs that the pace of economic growth is proportionally dependent on the distance of a given economy from the steady state. The higher the distance is (i.e. the greater the difference between \( \ln y \) and \( \ln y^* \)), the more rapid economic growth should be. This confirms the existence of real convergence (or income-level convergence) defined as the situation in which less developed countries (with lower GDP per capita) grow faster than more developed ones. Equation (10) shows the value of the so-called beta coefficient (this coefficient is denoted as \( \lambda \) because \( \beta \) is used here for human capital share in income).

Applying some mathematics, the MRW model allows us to calculate the formula for economic growth during the transition period towards the steady state. It is given by:

\[ \ln y(t) - \ln y(0) = (1 - e^{-\lambda t}) \frac{\alpha}{1 - \alpha - \beta} \ln s_k + (1 - e^{-\lambda t}) \frac{\beta}{1 - \alpha - \beta} \ln s_k + \]

\[ - (1 - e^{-\lambda t}) \frac{\alpha + \beta}{1 - \alpha - \beta} \ln (n + a + \delta) - (1 - e^{-\lambda t}) \ln y(0) \]  

As we can see, economic growth depends on initial income level (which suggests the existence of convergence) as well as on the factors determining output in long-run equilibrium (investment rate in physical and human capital, and population growth). Estimating equation (12) allows us to find the determinants of economic growth according to the MRW model.

Nonneman and Vanhoudt further extended the Solow model. However, as we argued earlier, the value added of introducing more types of capital is diminishing because macroeconomic performance depends not only on direct factors, but also on deep determinants related to institutional environment. Thus, we propose the extension of the macroeconomic production function, but in our opinion institutions should be included as new factors of production, and not different types of capital. The production function takes the following form:

\[ Y = K^\alpha H^\beta (AL)^{1-\alpha-\beta} I^\zeta \]  

or per unit of effective labor terms:

\[ \frac{y}{AL} = k^\alpha h^\beta I^\zeta \]  

In the above formulas, \( I \) is the qualitative index measuring the institutional environment of the countries. One difference between our proposition (13) or (14) and the neoclassical production function is that our production function exhibits constant returns to all the quantitative (direct) inputs: physical capital, human capital, and effective labor. The institutional index has a separate power \( \zeta \) because this variable refers to deep
GDP determinants which reveal an impact on direct ones. Thus, the exponent for the institutional variable should not be related with the rest of the exponents, representing conventional inputs.

Using a similar analysis as earlier, the time paths for physical and human capital are:

$$\dot{k} = s_k k^\alpha h^\beta I^\zeta - (n + a + \delta)k$$  \hspace{1cm} (15)

$$\dot{h} = s_H k^\alpha h^\beta I^\zeta - (n + a + \delta)h$$  \hspace{1cm} (16)

while the levels of physical capital, human capital, and output per unit of effective labor in the steady state are equal to:

$$k^* = \left( \frac{s_k^{1-\beta} s_H^{\beta} I^{\zeta}}{n + a + \delta} \right)^{\frac{1}{1-\alpha-\beta}}$$  \hspace{1cm} (17)

$$h^* = \left( \frac{s_H^{1-\beta} s_k^{\beta} I^{\zeta}}{n + a + \delta} \right)^{\frac{1}{1-\alpha-\beta}}$$  \hspace{1cm} (18)

$$y^* = \left( \frac{s_k}{n + a + \delta} \right)^{\frac{\alpha}{1-\alpha-\beta}} \left( \frac{s_H}{n + a + \delta} \right)^{\frac{\beta}{1-\alpha-\beta}} I^{\frac{\zeta}{1-\alpha-\beta}}$$  \hspace{1cm} (19)

The last formula shows determinants of economic development in the long run equilibrium according to the institutions-augmented Solow model. Apart from standard factors, per capita income also depends on institutions. The relationship between the quality of institutions and the level of economic development is positive, implying that countries with a better institutional environment should be more developed than those with poor-quality institutions.

Logarithmizing equation (19) yields:

$$\ln \left( \frac{Y}{L} \right) = \ln A + \frac{\alpha}{1-\alpha-\beta} \ln s_k + \frac{\beta}{1-\alpha-\beta} \ln s_H +$$

$$- \frac{\alpha + \beta}{1-\alpha-\beta} \ln (n + a + \delta) + \frac{\zeta}{1-\alpha-\beta} \ln I$$  \hspace{1cm} (20)

Equation (20), estimated as the linear regression equation, allows us to verify and quantify empirically the impact of institutions on economic development.

Similarly, formula (12), augmented for institutions, becomes the following:

$$\ln y(t) - \ln y(0) = (1 - e^{-\lambda t}) \frac{\alpha}{1-\alpha-\beta} \ln s_k + (1 - e^{-\lambda t}) \frac{\beta}{1-\alpha-\beta} \ln s_H +$$

$$+ (1 - e^{-\lambda t}) \frac{\zeta}{1-\alpha-\beta} \ln I - (1 - e^{-\lambda t}) \frac{\alpha + \beta}{1-\alpha-\beta} \ln (n + a + \delta) - (1 - e^{-\lambda t}) \ln y(0)$$  \hspace{1cm} (21)
Equation (21) shows that, according to the institutions-augmented Solow model, economic growth depends on institutions as well as standard factors. The better institutions are, the more rapid is economic growth. Estimating equation (21) using linear regression allows us to check empirically the impact of institutions on economic growth. Of course, some assumptions as to the specification of the regression model and the methods of estimation have to be imposed. For example, Białowolski, Kuszewski, and Witkowski [2010] assume that all the macroeconomic relationships are linear.

This way of finding economic growth determinants, namely the estimation of the regression equation, is not the only way of finding the variables that affect economic growth. Another type of research aiming at verifying growth determinants is the growth accounting exercise. Growth accounting is an empirical exercise aimed at calculating how much economic growth is caused by changes in measurable factor inputs (such as labor, physical capital, or human capital) and in the level of technology. The unexplained part of economic growth, measured as a residual, is called the Solow residual and it is interpreted as the proxy of technical progress or the increase in total factor productivity (TFP). Estimation of the regression equation and carrying out the growth accounting framework involve different econometric methodology and they cannot be directly compared because based on this study, we cannot easily state which portion of the Solow residual is attributed to institutions and which to elements other than institutions. For the studies in which a growth accounting exercise is carried out, see e.g. Rapacki and Próchniak [2006].

We can find in the literature some other papers in which the authors develop theoretical models of economic growth to include institutions. For example, Hall and Jones [1999] consider a model in which the institutional indicator (social infrastructure) is included as the endogeneous variable into the model: it affects and is affected by the level of GDP. Acemoglu, Johnson, and Robinson [2001] consider a multi-equation model incorporating the relationship between, among others, current institutions, early institutions and economic development. Eicher, García-Peñalosa, and Teksoz [2006] also propose a production function that includes both inputs and institutions. They assume that the level of productivity is a function of institutions: \( A_i = Ae^{\gamma I} \). Given the standard neoclassical production function in the form of \( Y = AK^\alpha H^\beta L^{1-\alpha-\beta} \), per capita output after taking logs is the following: \( \ln y = \ln A + \alpha \ln k + \beta \ln h + \gamma I + \varepsilon \), where \( \varepsilon \) is the error term. However, unlike in our research, those authors consider neither the dynamics of the model nor the steady-state characteristics; they just limit themselves to estimate econometrically the production function in a logarithmized form, whatever the remaining assumptions of the model would be. On the other hand, Aghion (2006) develops another theoretical model of “appropriate institutions” and economic growth that shows the relative importance of innovation for productivity growth.
(b) Empirical background

Since there is no unique method to measure institutions, in the literature we find a lot of empirical studies that analyze the relationship between institutions and economic growth (or economic development). There number of these studies is too high to discuss even a small portion of them in one paper. For the sake of conciseness, we limit ourselves to presenting a brief comparison of selected empirical studies in Table 1. In the quoted studies, the authors analyze the impact of institutional environment on macroeconomic performance. Most of the institutional indicators are related to economic freedom, the level of democracy, and political stability.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Institutional variables</th>
<th>Countries and period</th>
<th>Main findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barro, 1996</td>
<td>The rule of law index; political rights index compiled by Gastil et al.</td>
<td>Ca. 100 countries, 1960–1994</td>
<td>The rule of law index is positively and significantly correlated with economic growth; political freedom reveals a nonlinear correlation with economic growth: once a certain level of democracy is achieved, a further rise of political rights hampers economic growth</td>
</tr>
<tr>
<td>Feng, 1997</td>
<td>Democracy index according to Gurr and Bollen</td>
<td>96 countries, 1960–1980</td>
<td>The direct impact of democracy on economic growth is negative, but an indirect impact - via the probability of government changes - is positive</td>
</tr>
<tr>
<td>Leblang, 1997</td>
<td>Democracy index according to Gurr</td>
<td>91 countries, 1960–1989</td>
<td>The initial level of democracy has positive and significant impact on subsequent economic growth rate</td>
</tr>
<tr>
<td>De Haan, Siermann, 1998</td>
<td>9 indices of economic freedom constructed by Scully and Slottje</td>
<td>78 countries, 1980–1992</td>
<td>Some indices of economic freedom reveal a positive relationship with economic growth; others exhibit no correlation</td>
</tr>
<tr>
<td>Hall, Jones, 1999</td>
<td>Social infrastructure (index of government anti-diversion policies and openness to international trade)</td>
<td>127 countries, 1960/1986–1995</td>
<td>Differences in social infrastructure cause large differences in income across countries</td>
</tr>
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<tr>
<td>Wu, Davis, 1999</td>
<td>Index of economic freedom based on the factor analysis applied to component indicators of the Gwartney et al. index of economic freedom; index of political freedom based on political rights and civil liberties according to Gastil et al.</td>
<td>Ca. 100 countries, 1975–1992</td>
<td>Economic freedom positively affects economic growth; for a given level of economic freedom, economic growth does not depend on political freedom</td>
</tr>
<tr>
<td>De Haan, Sturm, 2000</td>
<td>Indices of economic freedom: Fraser Institute; and The Heritage Foundation/Wall Street Journal</td>
<td>80 countries, 1975 – 1990</td>
<td>Higher scope of economic freedom accelerates economic growth; the initial level of economic freedom does not affect GDP dynamics</td>
</tr>
<tr>
<td>Heckelman, Stroup, 2000</td>
<td>Component indicators of the Gwartney et al. index of economic freedom</td>
<td>49 countries, 1980–1990</td>
<td>Not all the component indicators of the index of economic freedom are positively correlated with economic growth</td>
</tr>
<tr>
<td>Mo, 2001</td>
<td>Corruption (according to Transparency International)</td>
<td>46 countries, 1970–1985</td>
<td>There is a negative relationship between corruption and economic growth</td>
</tr>
<tr>
<td>Pitlik, 2002</td>
<td>Standard deviation of time changes of the Fraser Institute index of economic freedom</td>
<td>82 countries, 1975–1995</td>
<td>Higher stability of the liberalization path (lower standard deviation) positively affects economic growth</td>
</tr>
<tr>
<td>Rivera-Batiz, 2002</td>
<td>Government quality index compiled by Hall and Jones; democracy index (political rights) compiled by Freedom House</td>
<td>59 countries, 1960–1990</td>
<td>Quality of governments positively and significantly affects economic growth; democracy significantly contributes to economic growth only when it is associated with improved quality of governments</td>
</tr>
<tr>
<td>Scully, 2002</td>
<td>The Gwartney et al. index of economic freedom</td>
<td>26 countries, 1975–1990</td>
<td>Economic freedom has a positive and significant influence on economic growth; economic freedom decreases income inequalities</td>
</tr>
<tr>
<td>Sturm, Leertouwer, de Haan, 2002</td>
<td>Index of economic freedom compiled by the authors based on the factor analysis applied to component indicators (instead of constant weights)</td>
<td>49 countries, 1980–1990</td>
<td>Index of economic freedom built by the authors is not strongly correlated with economic growth</td>
</tr>
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<tr>
<td>Plümper, Martin, 2003</td>
<td>The level of democracy</td>
<td>83 countries, 1975–1997</td>
<td>The level of democracy exhibits a nonlinear impact on economic growth: the most rapid economic growth occurs in the countries with intermediate level of democracy</td>
</tr>
<tr>
<td>Eicher, García-Peñalosa, Teksoz, 2006</td>
<td>Social infrastructure compiled by Hall and Jones</td>
<td>More than 100 countries</td>
<td>The coefficient on institutions is positive and significant; when allowing for interactions, institutions matter more for growth in low human capital countries</td>
</tr>
<tr>
<td>Rodrik, 2007</td>
<td>Democracy index (average of civil liberties and political rights)</td>
<td>90 countries, 1970–1989</td>
<td>Despite the positive and statistically significant relationship between democracy and economic growth, after removing Botswana (outlier) there is no strong, determinate relationship between political participation and economic growth</td>
</tr>
<tr>
<td>Qian, Wu, 2008</td>
<td>EBRD institutional quality index</td>
<td>Transition countries, including China</td>
<td>There is a positive relationship between per capita income and institutional quality</td>
</tr>
<tr>
<td>Tridico, 2011</td>
<td>EBRD transition indicator; democracy index (average of civil liberties and political rights)</td>
<td>28 transition countries, 1989–2009</td>
<td>EBRD index is insignificantly correlated with economic growth (but the nonlinear relationship is visible); the level of democracy has a positive impact on the level of development (measured by HDI)</td>
</tr>
<tr>
<td>Próchniak Witkowski, 2012a; 2012b, 2013</td>
<td>Index of economic freedom (Heritage Foundation) and democracy index (Freedom House)</td>
<td>127 countries, 1970–2009; EU countries, 1993–2010</td>
<td>Economic freedom exhibits a positive impact on economic growth while the results for democracy are ambiguous</td>
</tr>
<tr>
<td>Rapacki, Próchniak, 2012</td>
<td>Index of economic freedom</td>
<td>38 countries, 1993–2007</td>
<td>There is a positive relationship between economic freedom and economic growth</td>
</tr>
<tr>
<td>Próchniak, 2013</td>
<td>Index of economic freedom, democracy index, doing-business indicator, governance indicator</td>
<td>153 countries, 1994–2009</td>
<td>There is a large positive impact of the quality of institutional environment on the level of economic development (but sometimes nonlinearities are present)</td>
</tr>
</tbody>
</table>

Source: Own elaboration.
The literature review shows a huge diversity of the methods of analysis, including various theoretical models, various institutional indicators, various samples of countries and time periods, as well as various ways of econometric modeling. Despite the fact that some clear tendencies appear (such as the positive impact of economic freedom on economic growth), some other questions are not yet resolved (e.g., whether the impact of institutions on growth is linear or nonlinear). Hence, there is still much room for the empirical studies on the relationship between institutions and economic growth. In this paper we would like to test the appropriateness of the institutions-augmented Solow model in explaining differences in the rates of economic growth and in the levels of economic development and, based on these results, to estimate the macroeconomic production function.

In the light of the literature review, the value added of this study refers to the following areas. First, the study does not include as many explanatory variables in the regression model as possible; instead, it focuses on those factors that can be explained by a theoretical structural model. Namely, a lot of authors include in the regression analysis the variables representing both the demand- and supply-side of the economy. In such a case, the variables are a little bit mixed because the demand-side factors affect the short run rate of economic growth while the supply-side factors influence the long run pace of GDP dynamics. In this study, we are based on the Solow-type model of economic growth and the variables involved are of a similar type (investment in physical and human capital) and we omit some other variables that represent different areas (government expenditure). Second, a similar approach is carried out to analyze the determinants of economic growth and economic development. Most of the other studies focus on either the factors of economic growth or the factors of economic development. Since various empirical studies are not easily comparable due to different time periods and samples of countries and different sets of explanatory variables, as well as different and often completely incomparable econometrician methods, one cannot conclude based on the literature review which aspect of macroeconomic performance (economic growth or economic development) is more affected by institutions. Third, this study permits direct comparison of various institutional indicators since they are included in the same model. Fourth, unlike some advanced econometrician methods which involve a lot of changing variables that make the original time series barely interpretable, this study shows the assessment of a simple linear relationship (correlation) between institutions and macroeconomic performance. Fifth, unlike some papers in which the authors estimate a lot of models and choose the best one for interpretation, this study is in line with the alternative approach in which the estimation of one model is sufficient to find economic growth determinants (see e.g. [Hendry and Krolzig, 2004]).
**Data**

The analysis covers 180 countries and the 1993–2012 period (but in some areas the sample includes fewer countries or a shorter time period). Since the study is based on the family of Solow models, only the equations that can be obtained from the theoretical analysis of the model are subject to estimation. Those are (6) and (12) for the MRW model and (20) – (21) for the institutions-augmented Solow model. Moreover, we estimate the analogous equations for the standard Solow model with physical capital only. We assume that the sum of the rates of technical progress and depreciation equals 0.05 (i.e. 5%) which is a common assumption in such analyses and shouldn’t lower the reliability of the results (see e.g. [Mankiw, Romer, Weil, 1992]; [Nonneman and Vanhoudt, 1996]). The aim of this study is to assess the impact of institutions (and some other factors) on economic growth and economic development. The sum $a + \delta$ appears in the explanatory variable $\ln(n + a + \delta)$. Even if the assumption of $a + \delta = 0.05$ is partly missing, it will not affect the estimates of the parameters standing on the remaining variables and the overall significance of the model at all, because adding a different amount to one of the explanatory variables influences only the estimated constant term. Hence, it makes no difference whether we assume $a + \delta = 0.05$ or any other value because nothing except the constant term is affected. On the other hand, in the globalized world it is reasonable to assume that the rate of technical progress does not vary across the whole world and the average rate of depreciation is the same across the economies because it depends on physical properties of capital.

In the analysis of the determinants of economic development, economic development is measured by GDP per capita at purchasing power parity (PPP), calculated as the 2010-2012 average. The average is taken in order to be robust to business cycles and, especially, the implications of the global crisis (Śledziewska and Witkowski [2012] analyze some of its effects). In the analysis of economic growth determinants, economic growth is measured by the growth rate of real GDP per capita at PPP between 1993 and 2012.

The explanatory variables are calculated as 10-year arithmetic averages in the case of determinants of economic development and 20-year arithmetic averages in the case of determinants of economic growth. If the available time series are shorter, which occurs especially in the case of institutional indicators, the average covers a shorter period.

The variable $s_K$ is measured by gross fixed capital formation (% of GDP). $n$ is the growth rate of population. The investment rate in human capital is not so easy to find due to the lack of one unique and commonly accepted measure of human capital. In empirical studies, various indices are used depending on the research methodology and data availability. In this analysis, we treat the variable $s_H$ as the secondary school enrollment ratio (% gross), justifying our choice based on experience.

The following institutional indicators are used in this study: the Heritage Foundation index of economic freedom, the Fraser Institute index of economic freedom, the World
Bank governance indicator, the Freedom House democracy index (average of civil liberties and political rights), and the EBRD transition indicator. We are aware of the fact that many institutional-related aspects are omitted in this analysis, such as transaction costs (discussed by Sulejewicz and Graca [2005]), income inequalities (see Graca-Gelert [2012] for details), or EU enlargement (see Rapacki and Próchniak [2009, 2010]).

Since institutional indicators take values from different scales, for comparability purposes all of them have been recalculated to the 0-10 scale where 10 represents the highest quality of institutional environment. (Investment rates in physical and human capital have also been adjusted to 0-10 scale; this transformation, however, does not affect the regression estimates except the coefficient standing for the constant term).

Of course, we are aware of the fact that there is a wide choice for proxies used for right-hand side variables. However, in order not to extend the article for testing various types of proxy variables, we are forced to choose specified variables to the analysis. In the case of physical capital, the choice of gross fixed capital formation is rather obvious. In the case of human capital, we are partly constrained by the availability of data. The best source of information for cross-sectional empirical studies is the Barro-Lee dataset which includes a number of variables on education. Among those variables, we have chosen secondary school enrollment ratio because of our belief that in the case of analysis of the world economies, the differences in secondary enrollment may better influence the differences in macroeconomic performance than differences in primary or tertiary school enrollment. In the case of EU countries or OECD countries, it is likely that we would choose tertiary school enrollment ratio as developed countries achieve comparable outcomes in terms of secondary education and this variable may have no explanatory power. Similarly, the choice of institutional variables depends on data availability published by specialized institutions.

The data, except the institutional variables, are taken from the Penn World Table (PWT) 7.0 Database [Heston, Summers, Aten, 2011], the World Economic Outlook Database [IMF, 2012], and the World Development Indicators Database [World Bank, 2013].

Results

In this section, we verify the validity of the institutions-augmented Solow model to explain the differences in economic development and economic growth between the countries. We begin the analysis with the determinants of economic development. Then we switch to the analysis of economic growth determinants.

Table 2 illustrates the regression estimates that are used to find the determinants of economic development. According to the institutions-augmented Solow model, the level of economic development depends on investment rates in physical capital and hu-
man capital, the quality of institutions, and the growth rate of the population. The relationship between economic development and physical and human capital as well as the institutional environment is obviously positive, while the link with population growth should be rather negative. In order to check the robustness of the results, we verify not only the institutions-augmented Solow model, but also the standard Solow model and the Mankiw-Romer-Weil model. The basic Solow model includes one type of capital as the explanatory variable: $\ln sK$; the MRW model includes two such variables: $\ln sK$ and $\ln sH$.

### TABLE 2. Estimation results: the determinants of economic development

<table>
<thead>
<tr>
<th>explanatory variable</th>
<th>Standard Solow model</th>
<th>MRW model</th>
<th>Institutions-augmented Solow model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>$\ln sK$ coef.</td>
<td>1.26</td>
<td>0.32</td>
<td>0.24</td>
</tr>
<tr>
<td>t-statistics</td>
<td>5.82</td>
<td>1.97</td>
<td>1.68</td>
</tr>
<tr>
<td>p-value</td>
<td>0.00</td>
<td>0.051</td>
<td>0.094</td>
</tr>
<tr>
<td>$\ln sH$ coef.</td>
<td>2.09</td>
<td>1.56</td>
<td>1.67</td>
</tr>
<tr>
<td>t-statistics</td>
<td>15.56</td>
<td></td>
<td>13.07</td>
</tr>
<tr>
<td>p-value</td>
<td>0.00</td>
<td>0.00</td>
<td>0.000</td>
</tr>
<tr>
<td>$\ln I$ coef.</td>
<td></td>
<td></td>
<td>2.80</td>
</tr>
<tr>
<td>t-statistics</td>
<td></td>
<td></td>
<td>7.93</td>
</tr>
<tr>
<td>p-value</td>
<td></td>
<td></td>
<td>0.000</td>
</tr>
<tr>
<td>$\ln(n + 005)$ coef.</td>
<td>–2.06</td>
<td>0.52</td>
<td>0.50</td>
</tr>
<tr>
<td>t-statistics</td>
<td>–4.72</td>
<td>1.59</td>
<td>1.76</td>
</tr>
<tr>
<td>p-value</td>
<td>0.00</td>
<td>0.114</td>
<td>0.080</td>
</tr>
<tr>
<td>constant coef.</td>
<td>1.83</td>
<td>6.90</td>
<td>2.52</td>
</tr>
<tr>
<td>t-statistics</td>
<td>1.49</td>
<td>8.01</td>
<td>2.77</td>
</tr>
<tr>
<td>p-value</td>
<td>0.137</td>
<td>0.000</td>
<td>0.006</td>
</tr>
<tr>
<td>$R^2$ adj.</td>
<td>22.72%</td>
<td>67.29%</td>
<td>76.23%</td>
</tr>
<tr>
<td>$R^2$</td>
<td>23.59%</td>
<td>67.87%</td>
<td>76.82%</td>
</tr>
<tr>
<td>N</td>
<td>180</td>
<td>170</td>
<td>163</td>
</tr>
<tr>
<td>$F$ statistics</td>
<td>27.32</td>
<td>116.87</td>
<td>130.88</td>
</tr>
<tr>
<td>$\alpha$</td>
<td>0.56</td>
<td>0.09</td>
<td>0.08</td>
</tr>
<tr>
<td>$\beta$</td>
<td>0.61</td>
<td></td>
<td>0.57</td>
</tr>
<tr>
<td>$\zeta$</td>
<td>0.96</td>
<td>0.98</td>
<td>0.58</td>
</tr>
</tbody>
</table>

OLS estimates. Dependent variable: the level of GDP per capita at PPP (2009-2012 avg.). Explanatory variables (2003-2012 avg.): $sK$ – investment rate, $sH$ – secondary school enrollment ratio, $I$ – institutional variable (model A: the Heritage Foundation index of economic freedom, model B: the Fraser Institute index of economic freedom, model C: the World Bank world governance indicator, model D: the Freedom House democracy index, model E: the EBRD transition indicator), $n$ – population growth rate. N indicates the number of countries. $\alpha$, $\beta$ and $\zeta$ are the exponents in the production function standing for physical capital, human capital and institutional variable respectively.

Source: Own calculations.
while the institutions-augmented Solow model includes, apart from \( \ln s_k \) and \( \ln s_H \), also the institutional indicator \( \ln I \). The top rows of Table 2 show regression coefficients with \( t \)-statistics and \( p \)-values. Below are \( R \)-squares (both standard and adjusted), the number of observations \((N)\), and the results for \( F \) test. The bottom part presents the estimated parameters of the production function (those are calculated based on equation (6), (20), or the analogous equation for the standard Solow model).

The data in Table 2 indicate that the institutions-augmented Solow model performs extraordinarily well in explaining worldwide differences in income levels. Regardless of the institutional indicator, all the regression equations have very high \( R \)-squares while estimated coefficients, in terms of their sign and significance, correspond to our expectations and the theoretical analysis. For example, variant A indicates that differences in physical capital accumulation, human capital accumulation, population growth, and the scope of economic freedom (measured by the Heritage Foundation index of economic freedom) explain about three-fourths of worldwide differences in economic development. All the explanatory variables are statistically significant (but the sign for population growth is, contrary to the theory, positive). If we use another index of economic freedom as the institutional indicator, compiled by Fraser Institute, the results are similar in terms of explaining worldwide income level differences (\( R \)-square is about three-fourths); physical capital, however, becomes an insignificant variable, but human capital and institutions retain their significance. In variant C, in which the institutional variable is the world governance indicator compiled by World Bank, the results are similar to those in variant B (high \( R \)-square, significant explanatory variables except physical capital which is completely insignificant).

In the two remaining variants (D and E) physical capital retains its significance but the \( R^2 \) coefficient falls a little bit. Variant D includes the democracy index; in this model, lower \( R \)-square may result from the fact that, given the whole world, the impact of democracy on economic development is likely to be nonlinear (some authoritarian regimes may be as rich as the most democratic countries). The last model (variant E) includes only the post-socialist countries \((N = 26)\). It turns out that differences in physical capital and human capital accumulation, population growth, and the progress of market reforms (measured by the EBRD transition indicator) explain 65% of the differences in economic development.

As we can see, the institutions-augmented Solow model yields very good results in terms of explaining the determinants of economic development. More intensive accumulation of physical capital, better education and better institutional framework all lead to higher wealth of society. Taking into account the fact that the models are estimated for a very large sample of countries (except variant E), the results are in no way a coincidence; they represent a stable, long-run relationship.

The inclusion of institutions improves the findings obtained on the basis of simpler variants of the Solow model. The standard Solow model, with physical capital only, is responsible for explaining almost 25% of worldwide income level differences. Introduc-
tion of human capital increases this figure to almost 70% as shown by the MRW model. In both the standard Solow formula and the MRW approach, the coefficients standing for \( \ln s_K \) and \( \ln s_H \) are positive and significant, which is in line with the theory. Adding institutions further increases the \( R \)-square coefficient to 70% or more while the parameter standing for the institutional indicator is always positive and statistically significantly different than zero, and the remaining estimated parameters are mostly unaffected (with some exceptions belonging mainly to physical capital).

Let us now switch to the analysis of economic growth determinants. According to the institutions-augmented Solow model, economic growth depends on the investment rate in physical and human capital, institutional variable, population growth rate, and initial per capita income level which measures the impact of initial conditions on the subsequent rate of economic growth. Like in the case of determinants of economic development, we consider, along with the institutions-augmented Solow model, the standard Solow model (with physical capital only) and the MRW model.

The results are shown in Table 3 which, in terms of the structure, is analogous to Table 2. In the case of economic growth determinants, the explained variable is the growth rate of GDP per capita at PPP. We include the growth rate for the 1993–2012 period, which in our opinion is a relatively long time interval to show the long-term (or at least medium-term) relationships between the variables involved. A 20-year period is free of short-term cyclical fluctuations, representing reactions of the economies to internal and external shocks arising from both the demand-side and supply-side perspectives. Such shocks are short-term in their nature and institutional variables (as well as the other supply-side factors) do not have sufficient explanatory power to analyze GDP growth rates (or rather GDP fluctuations) caused by such shocks. That is why the considered time span should be sufficiently long to obtain reliable results.

According to the theoretical analysis, the relationship between the rate of economic growth and the initial GDP per capita level should be negative. Such a phenomenon confirms the existence of convergence. The appearance of the catching-up effect leads to diminishing income differences between countries. As regards the other economic growth determinants, the impact of physical capital and human capital accumulation as well as that of institutions on the rate of economic growth is positive while the relationship between population growth and output dynamics should be rather negative.

Our results suggest that the explanatory power of the institutions-augmented Solow model in explaining differences in the rates of economic growth is not as high as in the case of differences in economic development. As to effect, most of the explanatory variables representing institutions turn out to be statistically insignificant. Therefore, Table 3 lists only one variant of the institutions-augmented Solow model, namely variant B, which includes the Fraser Institute index of economic freedom as the institutional indicator. The latter index is the only institutional variable (out of five variables considered here) that is statistically significant in empirical estimation.
TABLE 3. Estimation results: the determinants of economic growth

<table>
<thead>
<tr>
<th></th>
<th>Standard Solow model</th>
<th>MRW model</th>
<th>Institutions-augmented Solow model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>coef.</td>
<td>t-statistics</td>
<td>p-value</td>
</tr>
<tr>
<td>ln(y(0))</td>
<td>–0.11</td>
<td>–4.72</td>
<td>0.000</td>
</tr>
<tr>
<td>ln(s)</td>
<td>0.38</td>
<td>4.93</td>
<td>0.000</td>
</tr>
<tr>
<td>ln(H)</td>
<td>0.20</td>
<td>2.34</td>
<td>0.021</td>
</tr>
<tr>
<td>ln(I)</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ln(n + 005)</td>
<td>–0.60</td>
<td>–3.95</td>
<td>0.000</td>
</tr>
<tr>
<td>constant</td>
<td>–0.65</td>
<td>–1.61</td>
<td>0.019</td>
</tr>
<tr>
<td>R^2 adj.</td>
<td>17.72%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R^2</td>
<td>19.11%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F statistics</td>
<td>13.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\alpha)</td>
<td>0.77</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\beta)</td>
<td>0.48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\zeta)</td>
<td>0.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(\lambda) (convergence parameter)</td>
<td>0.6%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OLS estimates. Dependent variable: the growth rate of GDP per capita at PPP (1993-2012 avg.). ln(y(0)): the 1993 GDP per capita level. The other explanatory variables (1993-2012 avg.): \(s_K\) – investment rate, \(s_H\) – secondary school enrollment ratio, \(I\) – institutional variable (model B: the Fraser Institute index of economic freedom), \(n\) – population growth rate. \(N\) indicates the number of countries. \(\alpha\), \(\beta\) and \(\zeta\) are the exponents in the production function standing for physical capital, human capital and institutional variable respectively. \(\lambda\) is the convergence parameter that measures the speed of convergence.

Source: Own calculations.

When analyzing the models listed in Table 3, it turns out that all the explanatory variables are statistically significant and have a ‘correct’ sign of the estimated regression parameter (a positive sign for investment rate, human capital accumulation and institu-
tions, while a negative one for initial income level and population growth). It means that all the explanatory variables considered here have an impact on the rate of economic growth of the countries under study. However, $R$-squared coefficients are lower than in the case of the models in which economic development was a dependent variable. Now, $R$-squared coefficients range from about 20% (for the standard and human capital-augmented Solow model) to 30% (for the institutions-augmented Solow model). Such low values of $R^2$ mean that the variables involved do not explain much of the variance of economic growth rates between the countries.

Hence, our analysis shows that the Solow model extended for institutional variables is better in explaining worldwide differences in economic development than differences in economic growth rates. This results from the fact that the institutional environment as well as the other two variables representing inputs (investment rate and human capital accumulation) are related to the supply side of the economy and influence potential output to a large extent. Indeed, the theoretical analysis of the Solow model associates output with potential output. Meanwhile, economic growth rates of the countries in the world, in our opinion, are influenced by many demand-side factors as well as the other forces implying that they do not well reflect fluctuations in potential output. Hence, our institutions-augmented Solow model better explains differences in economic development than in the rates of economic growth. Another explanation refers to the fact that institutional variables exhibit rather long run effects. The current level of economic development is the result of a long run behavior of a given economy and that is why institutional variables may explain it well. Conversely, economic growth, even averaged over a number of years, does not reveal long-run tendencies and that is why institutional variables may provide a weak explanation.

When interpreting the results of the regression estimates, it is necessary to point out that robustness of the analysis is the same as any other econometric methodology of this type. Namely, we are constrained in estimating a low number of models of economic growth using a specified variety of explanatory variables. This approach is contrary to some other alternative methods of estimation which refer to Bayesian model averaging (in those methods the researcher may use as many explanatory variables as possible and includes them randomly in the regression equations; in such a case, the final results are the averages calculated over a huge number of regression estimates). Given this approach, we cannot be sure that the results will be maintained based on a different set of control variables. This remark concerns any regression analysis and not just this particular research. Similarly, when interpreting the results based on the $R$-squared coefficients, the assessment of the model on the basis of only the $R^2$ has its weaknesses. That is why in order to assess the validity of the model, it is also necessary to analyze the significance of explanatory variables, which we do in the current study. In any case, any quantitative method applied to the analysis cannot guarantee
Mariusz Próchniak

that a given relationship in the causal sense really holds. Even if Granger causality tests were carried out, there would be no guarantee that a given association would indeed occur. Thus, a reference to the theoretical structural model always has to be made as in the current study.

All the estimated regression equations shown in Table 3 confirm the existence of conditional convergence. The convergence coefficient calculated in this study (the so-called beta coefficient) equals 0.6% for the standard Solow model, 1.0% for the Mankiw-Romer-Weil model and 1.1% for the institutions augmented Solow model. This result is in line with the general view on the process on convergence, namely that in terms of the whole world, the catching-up process is not very fast. Some authors, such as Barro and Sala-i-Martin [2003], point to a 2.5% worldwide rate of convergence. They, however, include more explanatory variables; if we added more control factors to the model, we would likely obtain a similar convergence parameter. Hence, our model does not give any unbelievable results.

When interpreting the results, the theoretical causal relationship between explanatory variables and the level of economic development is assumed to be as follows: past values of explanatory variables affect the current state of development. In reality, many macroeconomic relationships have mutual causality, which is partly caused by the fact that some variables are endogenous by nature. For example, rich countries may also have greater opportunities to save, to invest in human capital, and to have friendly regulations and institutions just because they are rich. An endogenic approach requires, however, more in-depth analysis, with more advanced econometric techniques, which could be a subject for further research.

Last but not least, let us estimate the production function. In order to be robust to different specifications of the model, we calculate the final values of parameters as arithmetic averages for all the estimated variants of the regression equation. According to the analysis of economic development determinants, physical capital share in income ranges between 0.01 and 0.56 (the former value is however spurious), giving an average of 0.15. Human capital share in income is higher ranging between 0.57 and 0.68, which yields a mean value of 0.61. The institutional share amounts to 0.55 on average (but also reveals high variation between the respective models). Hence, the production function derived from model estimations is supposed to be following:

$$\hat{Y} = K^{0.15}H^{0.61}L^{0.24}I^{0.55}$$  \hspace{1cm} (22)

The exponent for \( L \) is calculated as \( 1 - \alpha - \beta \) (in line with the assumption of constant returns to \( K, H, \) and \( L \)).

The production function estimated on the basis of models representing economic growth determinants can be derived in an analogous way. It has the following form:

$$\hat{Y} = K^{0.58}H^{0.25}L^{0.17}I^{1.05}$$  \hspace{1cm} (23)
The above formulas seem to yield slightly contradictory results. The first one emphasizes a significant role of human capital in the process of economic development while the latter one gives more importance to physical capital accumulation. This outcome may be explained by the fact that the former formula was obtained based on the determinants of economic development. In explaining differences in economic development, human capital is more important. The level of economic well-being is the result of the long-term process of economic growth which depends to a large extent on human capital accumulation over the past decades. Therefore, the countries which are human capital abundant achieve higher levels of economic development.

On the other hand, in the process of medium-term economic growth physical capital seems to be more important. It is investment in physical capital rather than investment in human capital which leads to an immediate acceleration of economic growth. The effects of human capital accumulation take more time and that is why in the process of economic growth physical capital is a more significant variable. This view is also shared by some models of economic growth (e.g. the Uzawa-Lucas model) which states that the pace of economic growth of a given less-developed country depends on whether this country is physical capital scarce or human capital scarce.

Our results imply that institutions are important in forming GDP regardless of the model. Institutional elasticity of output equals 0.55 or 1.05 on average indicating that institutions are one of the most important factors determining output. Most of the individual models also confirm this view.

**Conclusion**

Despite some ambiguities, our study gives some valuable recommendations for policymakers and policy makers. The government should focus on improving institutional environment, investing in education, and stimulating investments. The empirical analysis clearly confirms that these factors are necessary for rapid economic development. Politicians should act so as to improve all the areas of institutional environment, especially the quality of governance, economic freedom, democracy, and structural reforms. All these variables explain an enormous part of worldwide differences in income levels and are necessary for rapid economic development. The components of our institutional indicators specify the exact areas that should be improved and strengthened by the government. The priorities are high economic freedom and good governance. The most important reforms concern the following areas: to raise business, trade, investment, and financial freedom; to carry out high-quality fiscal and monetary policy; to enforce property rights; to raise labor market elasticity; and to control corruption. The application of structural reforms such as privatization or price liberalization should be carried out in transition countries. Without positive changes in institutional environment, it is very
difficult for societies to achieve strong and sustainable well-being. To enrich the country, policy makers should focus on institutional reforms that affect GDP via supply-side and demand-side determinants. According to the theoretical structural model and our empirical study, all these changes lead to better macroeconomic performance in the sense of more rapid economic growth and a higher level of economic development. This should be the primary goal for governments.

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Efekty międzynarodowych fuzji i przejęć dokonanych przez korporacje transnarodowe z Chin

Abstract

This paper is devoted to investigating the results of the largest deals of cross-border mergers and acquisitions by Chinese firms. General trends in such transactions were analysed, and selected deals were the subject of deeper examination. To put the deals into context, the research covered the performance of the participating firms before engaging in the transactions and several years after completing the deal. The study included not only financial data, but also information about market share, technological advances, and organisational changes due to mergers and acquisitions abroad.

The largest transactions had one common characteristic: they were scrupulously prepared and foreign partners were cautiously selected. Most of the transactions also had clearly recognised strategic aims.

It was important to focus on the context in which Chinese corporations operate. The largest foreign transactions were undertaken by firms controlled by the central or regional governments. They may not have focused on profit maximization, but on achieving some political or economic goals. Therefore, the results of transactions should be perceived in the scope of the entire Chinese economy. It is common that the foreign expansion of companies from emerging economies is frequently supported by the home government.

Keywords: foreign direct investment, cross-border mergers and acquisitions, China, emerging countries
Wprowadzenie

Ostatnie lata to okres intensywnych zmian na rynku międzynarodowych fuzji i przejęć. Rok 2007 przyniósł rekordowe rozmiary tego typu transakcji, z kolei lata późniejsze można określić jako „poszukiwanie dna”. Z drugiej strony, pomimo wybuchu globalnego kryzysu ekonomicznego w roku 2007, wiele firm z krajów wschodzących posiada znaczne możliwości finansowania rozwoju międzynarodowowego. Metodą często wykorzystywaną w ekspansji zagranicznej są przejęcia przedsiębiorstw z innych państw. Do roli bardzo aktywnych uczestników tego rynku pretendentują podmioty z Państwa Środku.

Podstawowym celem niniejszego artykułu jest ewaluacja wyników gospodarczych chińskich przedsiębiorstw dokonujących fuzji i przejęć podmiotów zagranicznych. Metodą badawczą zastosowaną w tym opracowaniu jest analiza danych obrazujących działalność wybranych firm za okres poprzedzający nabycie podmiotów zagranicznych oraz następujący po zawarciu tych transakcji. Ocena zostanie przeprowadzona głównie na podstawie danych finansowych, a także będzie wzbogacona o informacje dotyczące pozycji rynkowej, zmian organizacyjnych i pozyskanej technologii. Wśród źródeł informacji wykorzystanych w tym opracowaniu należy wymienić bazę danych DealWatch dostarczaną przez ISI Emerging Markets. Baza ta jest obszernym zbiorem informacji o firmach zaangażowanych w fuzje i przejęcia. Bardziej szczegółowa analiza działalności poszczególnych korporacji transnarodowych (KTN) zostanie przeprowadzona na podstawie ich sprawozdań finansowych w przekroju czasowym. Dużym problemem przy przeprowadzaniu tego typu badań jest dostępność zweryfikowanych danych pozwalających na dokonanie analizy porównawczej.

Znaczenie międzynarodowych fuzji i przejęć należy rozpatrywać również w skali całych gospodarek narodowych. Tym bardziej, że ekspansja zagraniczna korporacji z krajów wschodzących jest często wspierana przez władze danego kraju. W przypadku gospodarki chińskiej, która funkcjonuje w warunkach systemu komunistycznego, zagadnienie roli instytucji państwowych nabiera szczególnego znaczenia. Działalność największych przedsiębiorstw wpisana jest w polityczne plany rozwoju kraju na najbliższe lata. Prowadzi to do sytuacji, w której trudno jest wskazać czysto ekonomiczne motywy podejmowania przejęć zagranicznych.

Duże transakcje fuzji i przejęć międzynarodowych przyciągają uwagę opinii publicznej w momencie ich ogłoszenia. Składane są wówczas obietnice wysokich korzyści, które mają stać się udziałem obu firm. Krytycy tych działań przywołują wtedy potencjalne zagrożenia, szczególnie dla słabszego podmiotu. Uwaga analityków, inwestorów i mediów z reguły przestaje się skupiać na transakcjach tuż po ich zawarciu. Jednak dopiero wówczas rozpoczyna się właściwy proces łączenia przedsiębiorstw i od sposobu jego przeprowadzenia zależą ostateczne efekty całego przedsięwzięcia. Etap ten należy do bardzo trudnych, kosztownych i długotrwałych. Bardzo często pierwsze pozytywne efekty synergii odnotowywane są dopiero po kilku latach dalszych nakładów inwesty-
Efekty międzynarodowych fusji i przejęć dokonanych przez korporacje…

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cyjnych. Dlatego też analizę efektów danych transakcji należy rozpatrywać w dłuższym horyzoncie czasowym. Szczególnie wtedy, gdy zamierza się również ująć efekty bezpośrednio niemierzalne, na przykład transfer wiedzy czy też postrzeganie marki przez klientów.

Drugim ważnym zastrzeżeniem przy analizie fusji i przejęć jest odniesienie do ogólnoświatowej sytuacji makroekonomicznej. Największa liczba tego typu transakcji w wykonaniu przedsiębiorstw z krajów wschodzących miała miejsce w przededniu wybuchu kryzysu na rynku kredytów hipotecznych w Stanach Zjednoczonych w 2007 r. [Klimek, 2012, s. 417]. Spowodowało to zakupy przedsiębiorstw po zawyżonych cenach. Wynika to z faktu, że wyceny rynkowe wielu firm na świecie nie powróciły w ciągu ostatnich pięciu lat do swoich rekordowych poziomów z 2007 r. Biorąc pod uwagę wyłącznie kryterium wartości giełdowej, wiele z tych transakcji zostało przeprowadzonych w nieodpowiednim momencie. Jednak nie może to być jedyny wyznacznik oceny, ponieważ w okresie ostatnich kilku lat mogło zajść wiele pozytywnych interakcji między przejętym a przejmującym podmiotem.

Wcześniejsze badania empiryczne nie dają jednoznacznej odpowiedzi na pytanie o efekty fusji i przejęć dla zaangażowanych przedsiębiorstw. Badania przeprowadzone na populacji szwedzkich firm potwierdzają pozytywny wpływ fusji i przejęć na produktywność przejmowanych podmiotów [Siegel, Simons, 2010]. Co więcej, korzystniejsze efekty zachodziły podczas częściowego przejęcia niż przy zakupie całego podmiotu.


Kolejnym pytaniem, które należy postawić, jest to w jaki sposób firmy chińskie zamierzają osiągnąć sukces w przedsięwzięciach, które nie były opłacalne dla firm z krajów rozwiniętych? Volvo pod kontrolą Forda nie przynosiło zysków, telewizory Thomsona zniknęły z rynku, a produkty IBM były skierowane głównie do ograniczonej liczby klientów korporacyjnych. Można założyć, że dojdzie do realizacji efektów synergiei, choćby w zakresie wspólnych zakupów materiałów i komponentów, jednak korzyści w tym zakresie będą trudne do osiągnięcia, ponieważ już od wielu lat czołowi dostawcy komponentów komputerowych ulokowani są na Tajwanie i w Chinach. Podobna sytuacja zachodzi w przemyśle samochodowym, który należy do najbardziej zglocalizowanych rodzajów działalności.
Otoczenie instytucjonalne korporacji transnarodowych z Chin

Ekspansja chińskich przedsiębiorstw doskonale wpisuje się w nakreślone przez władze chińskie pod koniec lat siedemdziesiątych XX w. politykę powrotu gospodarki Chin na najwyższą pozycję w światowym rankingu. Deng Xiaoping założył, że gospodarka chińska zwiększy swoją wartość w ciągu ostatnich dwóch dekad XX w. aż czterokrotnie [Lin, 2012, s. 3]. Cel ten został osiągnięty z nadwyżką, a dynamiczny rozwój gospodarczy kontynuowany był w kolejnych latach. Dane z początku 2012 roku wskazują na pewne spowolnienie rozwoju tej gospodarki, jednak tempo wzrostu ciągle jest imponujące. Dynamika zmian produktu krajowego brutto wynosiła ponad 7%, co jest wartością niespotykana w żadnej z zaawansowanych gospodarek.

Zasoby pozyskane w wyniku fuzji i przejęć mają szanse stać się znaczącym elementem rozwoju całej gospodarki chińskiej. Zarówno na poziomie makroekonomicznym, jak i dla poszczególnych firm z krajów wschodzących fuzje i przejęcia stają się doskonałym sposobem na nadrobienie wieloletnich zaległości i dogonienie światowej czołówki. Jeśli firmom tym przyszłoby rozwijać własne technologie, zajęłoby to wiele lat i pochłonęłoby ogromne środki. Ryzyko niepowodzenia takich przedsięwzięć byłoby również znaczące.

Co więcej, firmy te musiałyby rozwijać nowe technologie o wiele szybciej od swoich odpowiedników z rozwiniętych gospodarek, aby nie pozostawać ciągle o kilka kroków za liderami. Bardzo trudno jest wykonać taki skok po wielu latach zapóźnienia. Nawet mimo aktywnego wsparcia władz, rozwój technologii i nowe wynalazki nie zawsze można łatwo zadekretować. Tym bardziej, że ciągle jeszcze istnieją korzystniejsze lokalizacje do prowadzenia badań naukowych i rozwoju biznesu niż Chiny. Zgodnie z szacunkami, aż 70% z ponad jednego miliona Chińczyków, którzy kształcili się poza granicami kraju, nie powróciło do Chin [Reuters, 2012]. Sprawia to duże trudności w realizacji ambitnych planów naukowych dla całej gospodarki.

Można również przyjąć, że w sytuacji znaczącego zapóźnienia w sferze szeroko rozumianej wiedzy firmy o niższym poziomie zaawansowania technologicznego powinny rozwijać technologie wyprzedzające obecnie dostępne rozwiązania. Takie podejście jest jednak niezwykle trudne do wykonania bez solidnych podstaw w postaci znaczącej wiedzy o obecnych technologiach. Pewnym przykładem przeskoku technologicznego jest produkcja samochodów elektrycznych. Chińczycy nie osiągnęli światowego poziomu w rozwoju tradycyjnej (spalinowej) motoryzacji, jednak duże nakłady poświęcają na rozwój pojazdów opartych na odnawialnych źródłach energii (np. firma BYD). Podobne podejście można zaobserwować w stosunku do telefonów w krajach rozwijających się. Telefonia komórkowa rozwija się na terenach, na których nie były dostępne tradycyjne sieci telekomunikacyjne (i już najprawdopodobniej nigdy nie powstaną).

Rozwój technologiczny został zapisany w strategii rozwoju Chińskiej Republiki Ludowej (Medium- and Long-term National Plan for Science and Technology Development 2006–2020). Obserwując listę rodzajów działalności uznanych za kluczowe dla rozwo-
Efekty międzynarodowych fuzji i przejęć dokonanych przez korporacje…

ju kraju, można się spodziewać kolejnych znaczących projektów zagranicznych. Wśród priorytetowych gałęzi nauki i technologii znalazły się między innymi: biotechnologia, nanotechnologia czy zaawansowane rozwiązania informatyczne [MOST, 2006].

W badaniu działalności firm z Chin konieczne jest podkreślenie wpływu władz centralnych i regionalnych na działalność zagraniczną korporacji transnarodowych. Większość z dużych transakcji zagranicznych została dokonana przez firmy z dużym udziałem państwa lub przy aktywnym wsparciu władz. Nawet jeśli w Chinach prowadzone są procesy prywatyzacji, to rząd centralny, władz regionalne czy osoby prawne (legal person), które również są zależne od władz, nadal posiadają znaczącą kontrolę nad najważniejszymi podmiotami gospodarczymi. Na przykład, SAIC Motor został zasilony w 2008 r. dotacją z budżetu centralnego w wysokości 80 milionów juanów [SAIC Motor Corporation Limited, 2009]. Podobne transakcje zostały również odnotowane w sprawozdaniach finansowych tej firmy za poprzednie lata.


Jako już zostało powiedziane wcześniej, wspólną cechą wielu chińskich firm jest znaczący udział państwa, co powoduje, że nie dotyczą ich zasady upubliczniania informacji, jak to ma miejsce w przypadku firm, które są notowane na giełdach papierów wartościowych.

Co więcej, w dużych chińskich korporacjach stosunki właścicielskie należą do bardzo skomplikowanych. Bardzo często dominuje struktura konglomeratowa z wieloma, czasami bardzo różnymi, rodzajami działalności skupionymi w jednym podmiocie. Trudno jest wówczas określić przepływy finansowe, a ocena rozprzestrzeniania się wiedzy w takiej organizacji staje się wręcz niemożliwa. Dlatego też wyniki analizy sprawozdań finansowych należy traktować z pewną ostrożnością. Autor dołożył wszelkich starań, aby wyniki były dokładnym odzwierciedleniem rzeczywistości, jednak powinny one służyć głównie nakreśleniu linii rozwoju poszczególnych przedsiębiorstw, a nie sensu stricto analizie finansowej.

Prywatyzacja przedsiębiorstw państwowych nie uczyniła z rynku kapitałowego w Chinach wydajnego i przejrzystego narzędzia wyceny przedsiębiorstw. Duża część akcji państwowych przedsiębiorstw nie znajduje się bezpośrednio w obrocie giełdowym, co znacząco utrudnia ocenę działalności tych podmiotów, a ich wyceny często są bardzo
niedoskonałym wskaźnikiem wartości danej firmy [Young, McGuinness, 2001]. Nawet wyspecjalizowane agencje informacyjne, jak Bloomberg czy Reuters, nie dostarczają pełnej informacji na temat podmiotów, które są w dużej części kontrolowane przez państwo i znajdują się poza obrotem publicznym.

W analizie działalności chińskich przedsiębiorstw nie są również pomocne notowania na giełdach w Szanghaju, Shenzhen, czy też Hong Kongu. Wynika to z faktu, że spółka notowana na giełdzie często nie jest odzwierciedleniem działalności całej grupy kapitałowej. Również podejście do obowiązków informacyjnych wobec inwestorów pozostawia wiele do życzenia. Dużym problemem związanym z oceną działalności podmiotów gospodarczych z krajów wschodzących, w których znaczącą rolę odgrywa rząd lub rodzina założyciela, jest pomniejszanie roli podstawowego celu przedsiębiorstw, czyli maksymalizacji zysku [Su, Xu i Phan, 2008]. Może to prowadzić do znaczącego ograniczenia roli mniejszościowych inwestorów i podejmowania decyzji, które mogą prowadzić do strat dla tej grupy. Nie można tutaj założyć celowego działania na szkodę spółki, chodzi raczej o skupienie się na innych priorytetach, czasami o długim horyzontie czasowym. Stąd większościowy udział rządu w przejmującym podmiocie budzi uzasadniony sceptycyzm mniejszościowych udziałowców [Chen, Young, 2010].

Konkludując, wpływ otoczenia instytucjonalnego na podejmowane transakcje zagraniczne przejawia się w formie bezpośredniej i pośredniej. Władze chińskie odgrywają rolu bezpośrednią w postaci podejmowania strategicznych decyzji w największych przedsiębiorstwach i zapewniania im finansowania. Pośredni wpływ przejawia się w polityce promocji rozwoju technologicznego, wsparciu dyplomatycznym oraz stymulowaniu gospodarki w kierunkach związanych z działalnością „narodowych czempionów”.

**Analiza fuzji i przejęć międzynarodowych dokonanych przez firmy z Chin w latach 2002–2010**

W tej części opracowania przedstawione zostaną wyniki analizy podstawowych danych liczbowych dotyczących transakcji fuzji i przejęć międzynarodowych dokonanych przez firmy z Chin. Unikalność tej analizy wynika z przeprowadzenia jej na podstawie danych na poziomie poszczególnych przedsiębiorstw. W latach 2002–2010 najmniejsza chińska transakcja zakupu udziałów w zagranicznym podmiocie miała wartość zaledwie 0,81 mln USD. Na drugim krańcu znalazł się zakup 50,1 % nowo wyemitowanych akcji firmy Weatherly International PLC przez East China Mineral Exploration and Development Bureau za kwotę ponad 26 mld USD. Projekt ten miał na celu uzyskanie dostępu do znaczących źródeł miedzi w Namibii. Transakcja ta wyraźnie wpisuje się w koncepcję władz chińskich zapewniającej zasoby naturalne na potrzeby rozwoju Chińskiej Republiki Ludowej.

**TABELA 1. Liczba i wartość transakcji w latach 2002–2010**

<table>
<thead>
<tr>
<th>Wartość (w mln USD)</th>
<th>Liczba transakcji</th>
<th>Średnia wartość dla przedziału (w mln USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0,01–10,00</td>
<td>41</td>
<td>4,68</td>
</tr>
<tr>
<td>10,01–100,00</td>
<td>86</td>
<td>45,09</td>
</tr>
<tr>
<td>100,01–1000,00</td>
<td>64</td>
<td>395,36</td>
</tr>
<tr>
<td>1000,01 i więcej</td>
<td>37</td>
<td>3228,81</td>
</tr>
</tbody>
</table>

Źródło: Opracowanie własne na podstawie DealWatch.

Potwierdzeniem znaczenia surowców w ogólnej wartości transakcji fuzji i przejęć jest również lista najważniejszych przemysłów (tabela 2). Zostało tutaj ujętych dwadzieścia największych gałęzi. Jednak to pierwsza piątka stanowi o pozycji Chin na międzynarodowym rynku fuzji i przejęć. Wśród największych transakcji znalazły się zakupy udziałów w bankach zagranicznych przez CIC na początku kryzysu finansowego. W ten sposób władze chińskie zyskują również znaczący wpływ na globalne rynki finansowe.

Branże, w których zostały dokonane fuzje i przejęcia, można podzielić na trzy grupy: surowcowe, technologiczne i finansowe. Są to jednocześnie gałęzie gospodarki o strategicznym charakterze.

Z punktu widzenia wpływu chińskich przedsiębiorstw na zagraniczne firmy ważne jest określenie, w których gałęziach przemysłu najczęściej osiągana jest pełna kontrola nad przejmowanym podmiotem (tabela 3). Dziesięć branż o prawie stu procentowej kontroli to mniej znaczące dla całej gospodarki chińskiej rodzaje działalności. W większości były to również transakcje o mniejszej wartości. Znaczącą grupą są tutaj różnego rodzaju usługi, co każe wyciągnąć wniosek, że chodzi o przejęcie pełnej wiedzy tych podmiotów. Z kolei najniższe wartości notowane są dla produktów i usług skierowanych do szerokiego grona odbiorców.
**TABELA 2. Wartość międzynarodowych fuzji i przejęć w latach 2002–2010 w podziale na główne rodzaje działalności (w mln USD)**

<table>
<thead>
<tr>
<th>Rodzaj działalności wg NAICS</th>
<th>Wartość</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wydobycie ropy i gazu (211)</td>
<td>57 222,50</td>
</tr>
<tr>
<td>Górnictwo, z wyjątkiem ropy naftowej i gazu (212)</td>
<td>39 900,36</td>
</tr>
<tr>
<td>Bankowość inwestycyjna (523)</td>
<td>13 003,45</td>
</tr>
<tr>
<td>Produkcja chemikaliów (325)</td>
<td>11 028,13</td>
</tr>
<tr>
<td>Bankowość komercyjna (522)</td>
<td>4 567,85</td>
</tr>
<tr>
<td>Usługi użyteczności publicznej (221)</td>
<td>4 531,57</td>
</tr>
<tr>
<td>Produkcja środków transportu (336)</td>
<td>2 980,01</td>
</tr>
<tr>
<td>Usługi dla górnictwa (213)</td>
<td>2 907,00</td>
</tr>
<tr>
<td>Transport powietrzny (481)</td>
<td>1 937,05</td>
</tr>
<tr>
<td>Produkcja komputerów i urządzeń elektronicznych (334)</td>
<td>1 696,54</td>
</tr>
<tr>
<td>Usługi wypożyczania i leasingu (532)</td>
<td>1 500,00</td>
</tr>
<tr>
<td>Telekomunikacja (517)</td>
<td>1 286,65</td>
</tr>
<tr>
<td>Fundusze kapitałowe (525)</td>
<td>956,85</td>
</tr>
<tr>
<td>Produkcja maszyn (333)</td>
<td>743,53</td>
</tr>
<tr>
<td>Usługi ubezpieczeniowe (524)</td>
<td>676,32</td>
</tr>
<tr>
<td>Nadawanie programów telewizyjnych i radiowych (515)</td>
<td>511,73</td>
</tr>
<tr>
<td>Rybołówstwo i myślistwo (114)</td>
<td>481,06</td>
</tr>
<tr>
<td>Produkcja napojów i wyrobów z tytoniu (312)</td>
<td>384,03</td>
</tr>
<tr>
<td>Budownictwo (236)</td>
<td>327,11</td>
</tr>
<tr>
<td>Produkcja wyrobów skórzanym (316)</td>
<td>280,07</td>
</tr>
</tbody>
</table>

Zdroje: Opracowanie własne na podstawie DealWatch.

**TABELA 3. Udział chińskich nabywców w zagranicznych podmiotach w latach 2002–2010 w podziale na przemysły (w %)**

<table>
<thead>
<tr>
<th>Rodzaj działalności wg NAICS</th>
<th>Udział</th>
</tr>
</thead>
<tbody>
<tr>
<td>Najwyższe zaangażowanie w podmiotach docelowych</td>
<td></td>
</tr>
<tr>
<td>Inne usługi informatyczne (519)</td>
<td>100,00</td>
</tr>
<tr>
<td>Usługi wypożyczania i leasingu (532)</td>
<td>100,00</td>
</tr>
<tr>
<td>Rybołówstwo i myślistwo (114)</td>
<td>100,00</td>
</tr>
<tr>
<td>Produkcja zwierzęca (112)</td>
<td>100,00</td>
</tr>
</tbody>
</table>
Podstawową konkluzją płynącą z tej części artykułu jest kluczowa rola największych chińskich przedsiębiorstw w zakresie nabywania podmiotów zagranicznych. Wybrane chińskie korporacje cieszą się w tym zakresie daleko idącym wsparciem władz, ponieważ transakcje te są związane z realizacją długofalowych celów całej gospodarki.

Transakcje fuzji i przejęć międzynarodowych w kluczowych przemysłach w świetle osiągniętych wyników

Poniższa część tego opracowania zostanie poświęcona szczegółowej analizie chińskich transakcji w dwóch kluczowych obszarach: produkcji środków transportu oraz produkcji komputerów i urządzeń elektronicznych. Wybór ten był umotywowany znaczącym zaawansowaniem technologicznym tych firm, obecnością wielu z nich na giełdach papierów wartościowych oraz globalnym charakterem działalności. To również branże charakteryzujące się znaczącą konkurencją i bardzo wysokimi barierami wejścia. Powoduje to, że odniesienie sukcesu w fuzjach i przejęciach jest również bardzo trudne. Ocena skutków transakcji dokonanych przez firmy chińskie przyjmie formę analizy da-

<table>
<thead>
<tr>
<th>Rodzaj działalności wg NAICS</th>
<th>Udział</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produkcja tekstyliów (314)</td>
<td>100,00</td>
</tr>
<tr>
<td>Produkcja odzieży (315)</td>
<td>100,00</td>
</tr>
<tr>
<td>Produkcja wyrobów z tworzyw sztucznych i gumy (326)</td>
<td>100,00</td>
</tr>
<tr>
<td>Produkcja wyrobów z metalu (332)</td>
<td>100,00</td>
</tr>
<tr>
<td>Zarządzanie przedsiębiorstwami (551)</td>
<td>100,00</td>
</tr>
<tr>
<td>Usługi doradztwa technicznego i naukowego (541)</td>
<td>97,14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Najniższe zaangażowanie w podmiotach docelowych</th>
<th>Udział</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telekomunikacja (517)</td>
<td>39,82</td>
</tr>
<tr>
<td>Produkcja paliw i pochodnych węgla (324)</td>
<td>34,44</td>
</tr>
<tr>
<td>Usługi internetowe i obsługa baz danych (518)</td>
<td>31,10</td>
</tr>
<tr>
<td>Produkcja napojów i wyrobów z tytoniu (312)</td>
<td>31,05</td>
</tr>
<tr>
<td>Dealerzy pojazdów mechanicznych i ich części (441)</td>
<td>30,00</td>
</tr>
<tr>
<td>Usługi ubezpieczeniowe (524)</td>
<td>29,75</td>
</tr>
<tr>
<td>Usługi dla transportu (488)</td>
<td>25,00</td>
</tr>
<tr>
<td>Bankowość komercyjna (522)</td>
<td>22,19</td>
</tr>
<tr>
<td>Nadawanie programów telewizyjnych i radiowych (515)</td>
<td>18,46</td>
</tr>
<tr>
<td>Sklepy wielobranżowe (452)</td>
<td>14,90</td>
</tr>
</tbody>
</table>

Źródło: Opracowanie własne na podstawie DealWatch.
nych finansowych oraz zmian organizacyjnych. Szczególnie druga grupa czynników jest istotna, bowiem wśród motywów ekspansji zagranicznej często są wymieniane efekty synergii, uczenia się oraz pozyskania nowej technologii.

Pominięte zostały największe przemysły związane z wydobyciem i przerobem metali i minerałów ze względu na zupełne związek ich działalności z polityką władz. Powoduje to, że dostaw ropy naftowej napędzającej chińską gospodarkę nie można traktować jako działalności gospodarczej, która rządzi się typowymi rozwiązaniami rynkowymi.


Niektóre z transakcji przejść zagranicznych miały swój finał w postaci dalszej konsolidacji w branży. Firma Nanjing Automobiles walczyła o przejęcie brytyjskiej firmy MG Rover przeciwko SAIC. Zwycięzcą okazała się firma Nanjing Automobiles, która jednak
Tabela 4. Transakcje w przemyśle wytwarzającym środki transportu (NAICS 336)

<table>
<thead>
<tr>
<th>Rok</th>
<th>Kraj docelowy</th>
<th>Podmiot przejmowany</th>
<th>Kupujący</th>
<th>Wartość transakcji (w mln USD)</th>
<th>Udział w kapitale przejmowanego podmiotu (w %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>Korea Południowa</td>
<td>GMDaewoo Automotive &amp; Technology Co.</td>
<td>Shanghai Automotive Industry Corporation (Group)</td>
<td>59,70</td>
<td>10,00</td>
</tr>
<tr>
<td>2004</td>
<td>Korea Południowa</td>
<td>Ssang Yong Motor Co.</td>
<td>Shanghai Automotive Industry Corporation (Group)</td>
<td>500,00</td>
<td>48,92</td>
</tr>
<tr>
<td>2005</td>
<td>Zjednoczone Królestwo</td>
<td>MG Rover</td>
<td>Nanjing Automobiles Group Co., Ltd</td>
<td>86,40</td>
<td>100,00</td>
</tr>
<tr>
<td>2005</td>
<td>Indie</td>
<td>FAW Bharat Forge (Changchun) Company Limited</td>
<td>Bharat Forge Co.</td>
<td>50,00</td>
<td>52,00</td>
</tr>
<tr>
<td>2006</td>
<td>Zjednoczone Królestwo</td>
<td>Lawrence Automotive Interiors Limited</td>
<td>Huaxiang Group</td>
<td>6,70</td>
<td>100,00</td>
</tr>
<tr>
<td>2007</td>
<td>Niemcy</td>
<td>SCHE35 Verwaltungsgesellschaft mbH</td>
<td>Fuyao Glass Industry Group Co., Ltd.</td>
<td>11,09</td>
<td>100,00</td>
</tr>
<tr>
<td>2009</td>
<td>Stany Zjednoczone</td>
<td>Majątek do produkcji układów hamulcowych i zawieszenia Delphi Corporation</td>
<td>Beijing West Industries Co</td>
<td>100,00</td>
<td>100,00</td>
</tr>
<tr>
<td>2010</td>
<td>Szwecja</td>
<td>Volvo Car Corporation</td>
<td>Geely Holdings Group Co., Ltd.</td>
<td>1500,00</td>
<td>100,00</td>
</tr>
<tr>
<td>2010</td>
<td>Stany Zjednoczone</td>
<td>Aktywa do produkcji układów kierowniczych Nexteer Automobile</td>
<td>Pacific Century Motors</td>
<td>450,00</td>
<td>brak danych</td>
</tr>
</tbody>
</table>

Zródło: Opracowanie własne na podstawie DealWatch.

została połączona w 2007 r. z większym SAIC, stając się jego spółką zależną. Takie połączenie było zgodne z zamierzeniami rządu chińskiego oraz przeprowadzone przy jego znaczącym wsparciu [Xinhua, 2007].

W przemyśle komputerowym (patrz tabela 5) również zostały dokonane znaczące transakcje przejęcia podmiotów zagranicznych. Najbardziej doniosłą było przejęcie części amerykańskiego IBM przez koncern Lenovo. Pozwoliło to chińskiej producentowi na zaistnienie na rynkach międzynarodowych. Przed dokonaniem transakcji sprzedaż
zagrajciczna wynosiła około 2% całości przychodów Lenovo, a w wyniku zakupu IBM zwiększyła się do ponad 60% [Duhamel, 2009]. Moment ten można potraktować jako zupełnie nowy początek dla firmy Lenovo, która zmieniła się z chińskiego producenta komputerów w jednego z globalnych liderów. Co więcej, była to działalność na trudnym rynku i istniało wiele zagrożeń dla nowego właściciela. Jednym z nich była możliwość utraty kluczowych klientów, którymi w większości byli profesjonalni odbiorcy, czy też nastawienie amerykańskich pracowników do nowego właściciela.


Przedstawione powyżej przykłady przejęć dokonanych przez firmy chińskie potwierdzają z reguły pozytywny wpływ tych transakcji zarówno na podmiot przejmujący, jak i przejmowany. Należy zwrócić uwagę, że łączenie firm pochodzących z zupełnie odmiennych gospodarek i kultur jest procesem bardzo trudnym i może zakończyć się niepowodzeniem.

Wszystkie transakcje przedstawione w tabeli 5 zostały dokonane w krajach o wyższym poziomie rozwoju, co potwierdza tezę o poszukiwaniu dostępu do bardziej zaawansowanej technologii.

**TABELA 5. Transakcje w przemyśle wytwarzającym komputery i urządzenia elektroniczne (NAICS 334)**

<table>
<thead>
<tr>
<th>Rok</th>
<th>Kraj docelowy</th>
<th>Podmiot przejmowany</th>
<th>Kupujący</th>
<th>Wartość transakcji (w mln USD)</th>
<th>Udział w kapitale przejmowanego podmiotu (w %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>Stany Zjednoczone</td>
<td>IBM</td>
<td>Lenovo Group Ltd.</td>
<td>1250,00</td>
<td>100,00</td>
</tr>
<tr>
<td>2006</td>
<td>Korea Południowa</td>
<td>Orion PDP Co., Ltd</td>
<td>Changhong Group</td>
<td>99,90</td>
<td>75,00</td>
</tr>
<tr>
<td>2008</td>
<td>Tajwan</td>
<td>TPV Technology Limited</td>
<td>China Great Wall Computer Shenzhen Co., Ltd</td>
<td>146,16</td>
<td>10,27</td>
</tr>
<tr>
<td>2009</td>
<td>Stany Zjednoczone</td>
<td>Crossbow Technology, Inc.</td>
<td>MEMSIC Semiconductor (Wuxi) Co., Ltd</td>
<td>18,00</td>
<td>100,00</td>
</tr>
</tbody>
</table>

Źródło: Opracowanie własne na podstawie DealWatch.

**Podsumowanie**

Chińskie firmy stały się znaczącymi uczestnikami rynku fuzji i przejęć w skali międzynarodowej. Historia ich przejęć liczy z reguły kilka lat, lecz można już wyciągnąć pierwsze wnioski. Przeanalizowane transakcje miały miejsce na przestrzeni ostatnich lat, które były bardzo dynamiczne w gospodarce światowej. Pozwoliło to na praktyczną weryfikację, czy przejęcia stworzyły prawdziwą wartość dla firm i pozwoliły na odnalezienie swojej szansy na skomplikowanym globalnym rynku.

Zagraniczne fuzje i przejęcia z udziałem chińskich przedsiębiorstw są z reguły bardzo starannie przygotowane, a partner jest bardzo szczegółowo wyselekcjonowany. Transakcje te charakteryzują się również jasno określonym celem strategicznym. Fuzje i przejęcia nastawione na poszukiwanie nowych technologii kierowane są do krajów wysoko rozwiniętych. Z kolei, jeśli celem jest pozyskanie zasobów, to kraje o wysokim potencjale w tym zakresie są wybierane jako lokalizacje docelowe. Bardzo często tego typu transakcje są związane z rządowymi projektami rozwojowymi w krajach goszczących. Tym samym Chiny, mimo iż same nie są krajem wysoko rozwinętym, znaczące środki przeznaczają na rozwój państw afrykańskich.

Fakt, który należy podkreślić, to trudności w dostępie do zweryfikowanych danych na temat firm chińskich. Szczególnie wówczas, gdy mamy do czynienia z konglomeratem o znaczącym udziale kapitału państwowego.

Chińskie fuzje i przejęcia mają głównie na celu nie tyle zwiększenie obecności firm na rynkach globalnych, ile rozwój na rynku chińskim. Jest to zgodne ze strategią rozwoju kraju, który ma być nie tylko największą fabryką świata, lecz także największym rynkiem. W przypadku przemysłu samochodowego cel ten został już spełniony. Nie ma to jednak charakteru ambicjonalnego, lecz raczej polega na skierowaniu chińskiej gospodarki na popyt wewnętrzny i uniezależnienie jej od uwarunkowań zewnętrznych.
Przypis

1 Autor korzysta ze wsparcia finansowego Fundacji na rzecz Nauki Polskiej w ramach stypendium START.

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SAIC Motor Corporation Limited, 2009, SAIC Motor Annual Report 2008, Shanghai,


Abstract

Multisourcing is a relatively new phenomenon that began a decade ago as companies began developing strategies to split large information technology (IT) contracts into smaller ones. This provided the opportunity to choose best-of-breed suppliers, who were supposed to collaborate to provide a seamless service to the company. Firms began to multisource when the large IT contracts they had did not bring assumed benefits. At the same time, the business environment was forcing them to be flexible, efficient and able to quickly implement new technologies. The trend to multisource has been growing, so it is worth investigating why companies prefer this form of cooperation. This topic was not a subject of research previously.

The goal of the article is to identify, structure and analyze the motives for choosing multisourcing as a model for cooperation between firms. It verifies motives based on IT multisourcing literature. Case study is described, which, following Eisenhardt, is the correct method for early stages of studies on a topic such as multisourcing, which is still in its nascent stages.

The identified motives for multisourcing are uncertainty bounding, access to resources, preparedness, effectiveness, learning, and external motives. In any case, companies need to be mature and ready for it, so the motive of preparedness is the most crucial one to realize benefits of this form of cooperation. Knowledge of motives for multisourcing is important for companies that take decisions on service supplier strategy. The article helps to increase understanding of the multisourcing phenomenon and offers a fertile basis for future research.

Keywords: multisourcing, cooperation motives
Introduction

Multisourcing has been growing in importance in recent years in information technology (IT) and business services, to the point of being called by Capgemini an “outsourcing model of the future” [The Keys to Successful Multisourcing, 2008]. Both its benefits and threats are discussed in the literature. As it is a relatively new phenomenon and “the literature on multisourcing is in its nascent stages” [Bapna, Barua, Mani, Mehra, 2010], no attempt has yet been made to put together motives for multisourcing. The goal of the article is to identify, analyze and structure the motives for choosing multisourcing as a form of cooperation between firms. This topic is important both from a theoretical and practical point of view. It adds to theoretical understanding of multisourcing, its reasons but also its characteristics, and opens ground for further research on multisourcing and its effects. By understanding why this form of cooperation is chosen, one can hypothesize about and prepare for its future development. It also gives practical understanding as to why and when firms should decide on multisourcing and what to expect from it. It will help them in implementing multisourcing to gain advantage over competitors.

Multisourcing is defined according to various components, the widest definition based on cooperation with multiple suppliers, and the most specific one based on cooperation – competitive cooperation – of multiple best-of-breed suppliers. Aspects of definitions by various authors are shown in table 1.

<table>
<thead>
<tr>
<th>Authors</th>
<th>Publication year</th>
<th>Multiple companies</th>
<th>Business goals and strategy</th>
<th>Best of breed suppliers</th>
<th>Collaboration between suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porter, M. E.</td>
<td>1985</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lacity, M.C., Willcocks, L.P.</td>
<td>1998</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cohen, L., Young, A.</td>
<td>2005</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gibson, S.</td>
<td>2006</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagle, A., Maughan, A.</td>
<td>2007</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Bielewicz, A.</td>
<td>2008</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levina, N., Su, N.</td>
<td>2008</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Capgemini White Paper</td>
<td>2008</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Sobińska, M.</td>
<td>2009</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Stora, J.</td>
<td>2010</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waszczuk, P.</td>
<td>2010</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
In this article the most specific meaning of multisourcing will be used: working with more than one external best-of-breed supplier with similar capabilities but different specialities, which work in a spirit of trust and teamwork in a collaborative process to achieve the client’s business goals. This is closest to the definition provided by Andone and Pavaloaia [Andone, Pavaloaia, 2010, p. 163]. In this article, service outsourcing for ongoing management and delivery of services will be referenced and cases will be chosen in which multisourcing was preceded by one-firm outsourcing (mega deal), which was unsatisfactory [Dieckmann, 2003, p. 1].

The structure of the article reflects the approach taken in the research: to first analyze the literature to identify potential motives and then to verify them in the practice of multisourcing. Literature concerning theories on interfirm cooperation, presented in section 1, suggests several potential candidates for motives and their applicability to this form of cooperation is verified in section 2, in which articles and cases of multisourcing in IT are analyzed. In section 3 a model is proposed for classification of these motives and conclusions.

**Theoretical background for multisourcing as a form of cooperation**

Multisourcing is a form of cooperation between companies. Various theories and concepts have attempted to explain why cooperation takes place: transaction cost economics (TCE), a resource-based view, game theory and strategic management theory. They will be reviewed in order to identify candidates for multisourcing motives.

(a) **Multisourcing in transaction costs economics**

According to the TCE, initially formulated by Coase [1937] [Coase, 1937] and “operationalized” by Williamson [Williamson, 1983] [Williamson, 1985], the decision to organize transactions within the firm or on the open market depends on the relative costs of internal versus external exchange [Prokop, 2010, p. 45] or of “make” or “buy”
Motives for multisourcing in the IT sector

[Klein, 2004]. Transaction costs are those experienced when arranging, managing and monitoring transactions in the market. Examples include writing a contract, negotiation, logistics, and monitoring.

Based on “rational economic reasons” as described by Williamson [2002], firms evaluate transaction costs of the exchange before selecting between three main governance structures: market, hybrid, and hierarchy [Williamson, 2002]. In all the structures, firms undergo various transaction costs. In hierarchies they include costs of management, risk of intrafirm relations, required level of engagement, and others. In the case of the market, costs include access to satisfactory prices, contract writing and execution, and others. A market would be thus chosen when adaptation, performance evaluation, and safeguarding costs are low. If these costs exceeded the production costs advantage, hierarchy would be chosen [Rindfleisch, Heide, 1997, p. 32]. Asset specificity, which appears when specific investment is required to make contracts effective [Thompson, 2003], is negatively related to performance of market transactions [Poppo, Zenger, 1998, p. 853], because with more specific assets quasi rents are created and opportunistic behavior appears which makes vertical integration a less costly solution [Klein, Crawford, Alchian, 1978].

Hennart [1993] has proved that using a mix of market and hierarchy is the most efficient form, as it minimizes the sum of shirking and cheating costs [Hennart, 1993, p. 529]. The so-called hybrid form of cooperation combines elements of both market and hierarchy. Their goal is to get rid of deficiencies of one organization (limited resources, low effectiveness, low efficiencies of scale, or possibility to split risks into more firms) and of hierarchy. In an extended enterprise the hybrid is a better choice, because hierarchy may be too cumbersome and impractical [Tanriverdi, Konana, Ge, 2007]. The choice of a specific partner is also connected with firm’s evaluation of transaction costs involved [Gulati, 1993, pp. 8-9]. Qu and Brocklehurst [2003] have conducted an analysis of transaction costs in the supplier selection and suggest ways and means by which a specific relationship between buyer and supplier may circumvent these costs [Qu, Brocklehurst, 2003, p. 53].

Multisourcing is a hybrid form closer to market than hierarchy. When compared with market exchange, mega deal and hierarchy, as in table 2, there are more factors increasing transaction costs incurred by multisourcing than decreasing them, as compared with other settings. An exception can be uncertainty reduction, as multisourcing lowers the costs of risk and opportunism versus market and of shirking versus mega deal and hierarchy. IT decisions violate many of the TCE assumptions, and only by relating to uncertainty and small numbers can the anomalies be explained [Lacity, Willcocks, 1995]. In addition, empirical evidence shows that uncertainty reduction may be an important reason for choosing multisourcing [Łoboda, 2012]. Looking at other sources of costs, firms decide for multisourcing even though it bears higher relative transaction costs than market, hierarchy and the mega deal. An explanation for this phenomenon may be
TABLE 2. **Sources of transaction costs increased (+) or decreased (–) by multisourcing as compared with market, hierarchy and “mega deal”**

<table>
<thead>
<tr>
<th>Source of Transaction Costs</th>
<th>Market</th>
<th>Mega deal</th>
<th>Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>search for (quality) suppliers</td>
<td>– +</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>culture fit</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>information search on suppliers</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>diverging objectives of partners</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>contract completeness</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>contract writing</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>more frequent contracting</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>having to coordinate many suppliers</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>management (HQ)</td>
<td>+</td>
<td>+</td>
<td>–</td>
</tr>
<tr>
<td>uncertainty</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>risk</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>opportunism</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>efficiency of scale</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>logistics</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>access to information</td>
<td>–</td>
<td>even</td>
<td>+</td>
</tr>
<tr>
<td>access to specific assets</td>
<td>–</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>access to good price</td>
<td>+</td>
<td>– +</td>
<td>–</td>
</tr>
<tr>
<td>access to assets/ HR/ knowledge</td>
<td>+</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>flexibility</td>
<td>+</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>shirking</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>


that firms have the capability to handle the costs. One way to reduce the transaction costs associated with information asymmetries, opportunism, bounded rationality, uncertainty and similar issues is better service quality resulting from a symbiotic relationship between the client and the service provider. Firms also lessen the costs by using appropriate contracts [Gulati, 1993, pp. 8–9] and by properly arranging, managing, and monitoring transactions [Child, Faulkner, 1998, p. 20]. Among other factors that contribute to lowering transaction costs are lowering the costs of preparation, management and monitoring of the transaction, and eliminating the risks of opportunistic behavior, as well as improving coordination through better exchange of information, common decision making, and ensuring discipline in implementing decisions [Czakon, 2007, p. 115].

(b) **Multisourcing in resource-based view**

According to the resource-based view – the name was first used by Wernerfelt [1984] – companies gain competitive advantage based on resources they own and relations be-
Motives for multisourcing in the IT sector

tween them [Rumelt, 1984, pp. 557–558]. Resources are defined as assets, capabilities, processes, firms’ attributes, knowledge, and other factors controlled by a firm that enable the firm to pursue a strategy that improves its efficiency and effectiveness [Barney, 1991]. Three types of resources are classified: physical capital, human capital, and organizational capital resources. Penrose sees a firm as a set of human and material, organizational and intellectual resources [Penrose, 1959]. To bring a sustained competitive advantage, the resources need to have four attributes: be valuable to improve firm’s efficiency and effectiveness, be rare, be imperfectly imitable and be without strategically equivalent substitutes [Barney, 1991]. High-quality scarce resources can bring additional revenues, called rent [Rumelt, 1991].

The resource dependence perspective focuses on how firms deal with the scarcity of supplies [Child, Faulkner, 1998, p. 34]. It is not possible for a company to have all resources and competencies needed; companies need to acquire the resources, for example by cooperating [Cygler, 2009]. Together firms gain from synergies from cooperation, leading to competitive advantages not separately available. Through cooperation, companies may also limit competitors’ access to supplies by blocking allies, setting technological standards, blocking distribution channels, and collusions [Czakon, 2007, p. 121]. As firms attempt to exert power, influence and control organizations possessing required resources [Pfeffer, Salancik, 1978], some companies start to cooperate to reduce uncertainty of depending on other organizations [Gulati, 1993, p. 10].

Among the immaterial resources, organizational capabilities are becoming more important [Itami, Roehl, 1987], for example, good financial control or the pace of implementing innovations. Capabilities differ from resources by the fact that resources are tradable and non-specific to the firm, whereas capabilities are firm-specific [Amit, Schoemaker, 1993]. Developing and using unique, valuable, and costly-to-copy capabilities can be a source of competitive advantage. A core competence needs to pass three tests: providing access to a wide variety of markets, offering perceived benefits to customers, and being difficult for competitors to imitate [Prahalad, Hamel, 1990, pp. 83–84]. Prahalad and Hamel [1990] point out that a multitude of cooperative relations is in many cases a key success factor and the ability to cooperate and create partnerships becomes a strategic competence [Sulejewicz, 1997]. Since the ability to multisource is difficult to copy by competition, can provide access to a wide variety of technologies, and can benefit customers by giving them access to better products in shorter time, this ability may be considered a strategic competence itself. In addition, the resource-based view provides an important insight into the motivations for multisourcing, because the scarcity and unequal split of resources, skills and information between suppliers contribute to company’s selecting multiple best-of-breed suppliers, thus maximizing the usage share and gaining on time, cost, and access to knowledge.
(c) **Multisourcing in game theory**

Game theory is a specific form of decision-making theory based on mathematical modeling of specific situations, processes, and phenomena [Cygler, 2002, p. 47]. It analyzes rational behavior when payoff depends on the steps taken by players [Camerer, 1994] and considerations and following moves of the rational participants [Heifetz, 2012, p. 3]. Game theory is useful to explain the strategies of competition and cooperation by observing which strategies players in a game adopt and which outcomes are achieved [Child, Faulkner, 1998, p. 26].

It is assumed that the birth of the theory was in 1944, with the publication of Neumann and Morgenstern's *Theory of Games and Economic Behaviour* [Malawski, Wieczorek, Sosnowska, 2009, p. 12]. However, it was first applied to economics in the late 1970s, with Spence's work on market signaling. Four problems with implementing game theory to strategy involve: they are too hard to use (chopstick problem), there are no general principles (collage problem), they are hard to test (testing problem) and they can explain anything (Pandora's box problem). Education, longitudinal tests and more detailed research might solve these problems [Camerer, 1994, pp. 218–219].

In an interfirm setting when the optimal score can be achieved through cooperation, firms are concerned if their partner would not defect [Child, Faulkner, 1998, p. 27]. The strategy of defection is rational in a zero-sum, non-repetitive game. In repetitive games it would be hard for companies to find potential partners for cooperation when their reputation is harmed, so cooperation is a preferred strategy. On the other hand, Rotemberg claims that long-term contracts reduce quality because companies do not fear that the partner would not buy from them [Rotemberg, 1991]. Thus writing mid-term contracts can increase probability of cooperation and increase quality. It might be the reason that contracts in multisourcing last for shorter periods than the mega deals.

It is possible to increase the probability of cooperation by setting a pro-cooperative structure of pay-offs or taxation of defection, better availability of information and increasing “the shadow of the future”, as described by Axelrod, which reflects the influence of the future on today's actions. Value of the long-term benefits from cooperation can be larger than the short-term benefits of defection [Sulejewicz, 1994, p. 63]. Other factors include limiting the amount of players, teaching people reciprocity and caring about each other, and improving recognition abilities [Axelrod, 1984].

The amount of players is an especially significant factor in multisourcing. According to game theory, the more players there are, the more difficult it becomes to promote joint interests and coordinate. The game becomes more complex and information costs increase. Cooperation is less stable and results are lower [Cygler, 2002, p. 54]. Because monitoring is more difficult, it is possible to observe the free ride phenomenon. In addition, with numerous players it is more difficult to follow the mutuality principle and provide immediate and just punishment [Sulejewicz, 1994, p. 71]. This leads to the conclusion that multisourcing is a complex setting and special measures
should be provided to limit the risk of free ride and to implement institutions allowing coordination and monitoring of results of each supplier. Therefore, companies need to be well prepared for multisourcing and design measures to increase the probability of cooperation.

(d) Multisourcing in strategic management theory: effectiveness, learning and external motives

As a part of the strategic management theory, Contractor and Lorange [1988] concentrated on the following antecedents for alliance formation: risk reduction, achievement of scale economies, technology exchanges, co-opting or blocking competition, overcoming trade barriers, facilitating international expansion, and linking complementary contributions of firms [Contractor, Lorange, 1988]. Other motives for collaboration include effectiveness, learning, transaction costs, resources, and uncertainty bounding [Czakon, 2007, p. 115]. Of these, two motives adding an interesting insight to multisourcing have not been discussed previously: effectiveness and learning.

Effectiveness can be achieved in three ways: through lowering purchasing or production costs, effects of synergies (economies of scale or scope, specialization), and increase of value [Contractor, 1986]. In multisourcing, cost effectiveness seems to be of lesser importance; having numerous suppliers does not create such economies of scale as in the case of one supplier. The post-contract management costs in multisourcing are estimated at close to 8% of total IT outsourcing costs [Lacity, Willcocks, 2001]. The costs are meant to be a trade-off with service quality, working with best-of-breed suppliers and innovation, which are at the heart of expectations from this relationship. Therefore, the value component of effectiveness could play a role in multisourcing, but not the cost component. If multisourcing were defined only as working with numerous competing suppliers, cost lowering could be expected, but as it aims for higher quality, flexibility or innovation, this factor should be less important.

Learning takes place while acquiring and using knowledge and improving processes. Powell et al [1996] distinguish between acquiring knowledge as a resource and learning, understood as evolving knowledge in a community between firms, universities, laboratories, suppliers, and consumers [Powell, Koput, Smith-Doerr, 1996, p. 116]. Child and Faulkner [1998] notice that the more ties there are in an industry, the more research intensive it is [Child, Faulkner, 1998]. Firms cooperate to be a part of such a group in order to innovate [Powell, Koput, Smith-Doerr, 1996], but also to pool technologies of partners, achieve technological synergy and exchange patents [Contractor, 1986], bring together complementary talents, enter markets faster, and join production resources to develop new technology. As multisourcing originated due to the fact that the large, one-supplier IT contracts did not bring expected results in terms of process excellence, innovation, and quality, one may expect that learning plays an important role in choosing cooperation with numerous providers.
Faulkner [1995] classifies motives into external (concerned with globalization or regionalization, international turbulence and uncertainty, fast technological change, and shortening of product life-cycles) and internal ones (resource dependency, minimization of transaction costs, need for speed to market, and spreading of financial risk) [Faulkner, 1995]. Internal ones have been discussed in previous sections of this article. However, external motives are very appropriate to multisourcing because it originated from changes in the environment. Most of the factors influencing it are also external, including economics, geography, organizational policy, culture, quality, trust, protection of supply source, price competition, and buyer inertia [Quayle, 2001, p. 43].

(e) Motives for multisourcing based on theory

The theories and concepts described above propose multiple, often overlapping candidates for multisourcing motives. TCE suggests the motive of uncertainty bounding. Analysis of other transaction costs suggests that firms do not undertake multisourcing to lower those costs, because it increases costs compared to hierarchy, mega deal or market. Instead, firms need to implement measures to counteract them by preparation and properly arranging, managing and monitoring transactions.

The resource-based view suggests such motives as access to material and non-material resources (capabilities, financial resources, prestige, knowledge, employees, and organizational solutions), synergies, and reducing the uncertainty of depending on other organizations. Game theory indicates multisourcing to be a complex setting, due to the increased risk of free ride involved in cooperation with multiple suppliers, and therefore a firm’s preparedness is an important condition for multisourcing.

Effectiveness can motivate firms to multisourcing through a synergy effect and an increase of value. The third way of achieving effectiveness, lowering of costs, seems to be of lesser importance in multisourcing because having numerous suppliers increases costs. Learning (innovation, acquiring knowledge as a resource, using knowledge, and improving processes) may play an important role in choosing multisourcing because it was initiated due to the fact that large, one-supplier IT contracts did not bring expected results in terms of process excellence, innovation, and quality. External motives are also very appropriate to multisourcing because it originated due to changes in the environment. Thus the goal of overcoming market turbulence and uncertainty as well as taking advantage of changes in the market provide a motivation for employing multiple suppliers.

Candidates for multisourcing motives and corresponding theories that helped to develop them are presented in table 3. Two motives which are often used in explaining other forms of cooperation are excluded from the table because as they are based on theoretical deliberation, they apparently do not refer to multisourcing: reducing transaction costs and effectiveness through cost reduction. Thus the following is proposed in
this article: multisourcing is undertaken based on various motives: internal, such as uncertainty bounding, access to resources, preparedness, effectiveness (synergies, increase of value), learning, and external motives.

**TABLE 3. Candidates for multisourcing motives and corresponding theories**

<table>
<thead>
<tr>
<th>Motive</th>
<th>Underlying theory/concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty bounding</td>
<td>TCE, Resource-based view, Strategic management theory</td>
</tr>
<tr>
<td>Access to resources (including knowledge)</td>
<td>Resource-based view, Strategic management theory</td>
</tr>
<tr>
<td>Preparedness</td>
<td>Game theory, TCE</td>
</tr>
<tr>
<td>Effectiveness (synergies, increase of value)</td>
<td>Resource-based view, Strategic management theory</td>
</tr>
<tr>
<td>Learning (innovation, using knowledge, improving processes)</td>
<td>Strategic management theory, Resource-based view</td>
</tr>
<tr>
<td>External motives (overcoming and taking advantage of changes in the market)</td>
<td>Strategic management theory</td>
</tr>
</tbody>
</table>

Source: own elaboration based on TCE, game theory, resource-based view and strategic management theory.

**Analysis of motives for multisourcing**

(a) **Method of the analysis**

To verify whether the findings from theories explaining interfirm cooperation refer to multisourcing, articles and cases from IT have been analyzed. This industry was chosen because research on multisourcing concentrates mainly on IT and business services. Case studies taken from literature were analyzed following Yin and Eisenhardt [Piekkari, Welch, Paavilainen, 2009, p. 570]. Eisenhardt [1989] stresses the usefulness of the case study method for early stages of research on a topic or for a “freshness of perspective” [Eisenhardt, 1989, p. 532]. Yin [2003] states that case study investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used [Yin, 2003]. In the case of multisourcing, the topic is relatively new and motives for it have not been elaborated before; therefore, case study is a relevant research method.

Six companies were identified that previously had outsourced their IT to one company and switched to multisourcing, and articles were found in which they explained the reasons for multisourcing. Those articles included interviews, press releases, and reports as well as press and scientific articles found in EBSCO and ProQuest and other databases available on the Internet. Literature concerning multisourcing in general was also collected and analyzed to find possible rationales for their choices. This use of three sources
– theories on interfirm cooperation, case studies, and multisourcing articles – produced a triangulation of data, which assures reliability of findings.

(b) Start of multisourcing and its motives among selected firms

In 1996 Sears signed a 10-year £344 million total outsourcing deal – for finance, logistics and computer operations – with Andersen Consulting [Lacity, Willcocks, 2001, p. 37]. It was cancelled after 17 months and changed into two contracts: with ISSC for distributed systems and help desk, and Advantis for mainframes. The reason for the change was a series of mergers that expanded the internal IT capabilities of the firm. Sears focused the new internal IT staff on development of new applications in which external suppliers manage existing systems, to better leverage existing resources. Sears’ main motives for multisourcing were thus leveraging resources, preparedness, and effectiveness.

Chevron started to multisource in 1998. The company asked Electronic Data Systems (EDS) for mainframe computer operations, GTE for voice and data networks and Sprint for running help desk support. The deal was signed for five years and was valued at $450 million [Lacity, Willcocks, 2001, p. 25]. Previously all the services were provided by one company: Chevron Information Technology Company. Chevron managers expected to reduce IT costs by 10%, focus on their core business, increase their service level, and provide better career opportunities for their IT employees. They also believed that selected suppliers would provide greater focus on their IT customers [Chevron will Outsource Selected IT Services to EDS, GTE, Sprint, 1997]. Their main motives were cost effectiveness, access to resources and learning.

In 2003 and 2004 Procter & Gamble (P&G), who had previously handed over all IT and business processes to EDS, signed deals with three firms: Hewlett-Packard (HP) for IT infrastructure and a business process outsourcing (BPO) deal covering finance and accounting, IBM Global Services for BPO to handle human resources and Jones Lang LaSalle for facilities management. Their goal was to become independent from a single provider [Gibson, 2006]. P&G’s main motive was uncertainty bounding.

In 2006 General Motors (GM) ended its exclusive relationship with EDS and split the deal among EDS, Capgemini, HP, IBM, Wipro and smaller firms. GM’s motivation was to achieve savings as it coped with the highest IT costs among carmakers [Gibson, 2006]. The company went through a preparation phase before the deal: it consolidated its systems and applications from 10,000 to 2,500 and spent several weeks writing descriptions for 44 IT processes. GM ordered that all its suppliers use the same language and standards for description of demands, acceptance and validations of systems, project management, monitoring, configuration management, and safety [Bielewicz, 2008]. Thus, the main motives for GM were preparedness and effectiveness.

Nissan started to multisource in 2006, changing a sole-source $1 billion agreement for application maintenance, support, and enhancement services with IBM signed in 1999 for nine years to services performed partly in-house (business analysis, program
management, and application, and infrastructure architecture planning) partly by Satyam (application services), and partly by IBM (IT infrastructure). The reason was increased competition among outsourcing vendors and the emergence of new offshore firms, as “the world had changed” [Thibodeau, 2006a]. Nissan wanted to better align its technology with business needs, take advantage of the emerging capabilities of its internal organization, and correct the mistake of outsourcing too much previously, as well as to avoid risk, save money and create value for the business [Thibodeau, 2006b]. Nissan’s main motives were uncertainty bounding, preparedness, effectiveness, and external.

Liverpool Victoria (LV) started multisourcing in March 2008. Previously it had a 13-year BPO contract with EDS, which was finished after 4 years. It has signed five smaller partnership agreements to work with its in-house IT team. The goal was to achieve its business targets [LV to Discontinue its 13-Yr, GBP 160Mn BPO Contract with EDS, 2007]. LV’s main motive was thus effectiveness.

(c) Multisourcing motives: evidence and rationale

To facilitate the analysis, candidates for multisourcing motives from the previous section are used in table 4 to show firm’s referrals to each of them. Most of the firms decided on multisourcing for effectiveness. Preparedness, access to resources, and uncertainty bounding were also important, and learning and external motive were mentioned by one company. Each motive and its rationale is described separately in this section.

<table>
<thead>
<tr>
<th>Motive</th>
<th>Sears</th>
<th>Chevron</th>
<th>Procter &amp; Gamble</th>
<th>General Motors</th>
<th>Nissan</th>
<th>Liverpool Victoria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty bounding</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Access to resources</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparedness</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Learning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>External motives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

Source: own analysis based on articles concerning multisourcing among selected firms.

Uncertainty bounding is confirmed as a motive for choosing multisourcing both by multisourcing literature and the case studies. Uncertainty is lowered in multisourcing first of all through an increase of flexibility by becoming independent on just one partner [Waszczuk, 2010], which was an important benefit for P&G [Gibson, 2006]. Second, uncertainty is decreased through lowering risk, which was an important goal for
Nissan, because it is easier to change one of many suppliers than to change a large one [Bielewicz, 2008]; this is especially important in times of economic slowdown [Sobińska, 2009a, p. 520]. Multisourcing can counter risks connected with large-scale environmental disasters, political unrest, and currency problems [Ellegaard, 2008]. It also helps to lower system risk, because if the safety systems of one partner are “broken”, losses will concern only a part of the project. Third, splitting a large contract into smaller ones can help to fix some of the mistakes committed when writing the original agreement [Bielewicz, 2008], which was one of the goals for Nissan.

There are several kinds of resources to which multisourcing allows access, both according to articles and cases. It gives access to “best-in-class capabilities” [Cohen, Young, 2005, p. 94], specialized, niche suppliers, and better service delivery and level. This opportunity of increasing the service level was crucial for Chevron [Chevron will Outsource Selected IT Services to EDS, GTE, Sprint, 1997]. Multisourcing also allows access to suppliers, which, thanks to their specialized knowledge, will propose totally non-standard services, so that they are able to provide totally new services to their clients [Sobińska, 2009a, p. 522]. On the other hand, Sears looked for external resources to take care of existing processes, and to focus its employees on innovation for better leverage of resources [Nannery, 1996] and Chevron looked for access to career options for its employees.

Preparedness for multisourcing, by designing measures to increase probability of cooperation and to lower transaction costs, is a crucial condition both according to game theory and TCE. Evidence from practice confirms the motive, because preparation precedes working with numerous suppliers. JP Morgan and Sears did not opt for multisourcing before they expanded their internal IT capabilities through mergers. Nissan had strengthened the capability of its internal organization and GM had conducted an analysis of all processes and standardized them, as a multisourcing company must be mature in terms of process management [Waszczuk, 2010].

As part of preparation, firms are advised to negotiate good contracts and to measure results [Cohen, Young, 2005]. It requires establishment of standard development tools, templates, integration standards, testing checklists [Howard, 2006, p. 23], and a transparent motivation system for service quality estimation [Sobińska, 2009a, p. 520], and for information exchange. For example, P&G’s goal of improving information flow is to hold regular meetings with suppliers [Gibson, 2006, p. 52].

Multisourcing needs to be considered a strategic decision, needing precise goals and investment [Overby, 2010]. Good coordination should also be set, which requires skills in managing the outsourcing relationships in order to get multiple vendors to deliver a seamless integrated service [Kobayashi-Hilary, 2006]. As multisourcing is a “complex beast” [Kobayashi-Hilary, 2006], companies need to be well prepared for the arrangement, management, and monitoring phase by designing a strategy, conducting an analy-
sis of processes and infrastructure, strengthening internal capabilities, ensuring information flow, and shaping a proper governance and result measurement systems.

**Effectiveness** is the most often-mentioned motive in the described case studies, despite the fact that it is widely accepted in the literature that multisourcing bears higher costs and lower benefits of scale than one-firm outsourcing. Nissan and Sears focus on effectiveness through value creation, but cost effectiveness is nonetheless important. GM opted for multisourcing to cope its IT costs, the highest among carmakers, Nissan to save, LV to achieve its business targets and Chevron to pursue a 10% cost-reduction goal.

The way to achieve savings is to force suppliers to be more effective through competition [Bielewicz, 2008], and a decision to multisource should be based on economic analysis [Waszczuk, 2010]. Overby [2010] also connects lowering the costs of multisourcing with the competitiveness of offers of various suppliers [Overby, 2010]. To achieve this effect, preparation is crucial at the phase of arranging, managing, and monitoring transactions.

Based on the literature, it was expected that effectiveness based only on synergies and increase of value would be a motive for multisourcing, but not cost effectiveness. This assumption was wrong: cost effectiveness is important, but on the other hand no firm mentioned synergy effect. The reason for the difference between assumptions and practice can be explained by the fact that all cases of multisourcing firms involve large companies, whereas the pieces of the business split between suppliers are still sizeable. Companies whose IT contract value is significant can achieve efficiencies, because such contracts guarantee a premium that is higher than operational risk [Munro, 2010]. Another possibility is that efficiencies were reached because parts of the businesses were moved to cheaper offshore locations. Third, it was especially the early contracts that focused on cost reduction; later ones were supposed to also fulfill other goals [Pinto, Harms, 2005, p. 9].

**Learning** is another motive proposed by the literature, which finds evidence in practice. Through such cooperation, companies get a higher quality of service and therefore more possibilities of further development combined with better prices [Munro, 2010]. Better service quality results from preference and access to more flexible, niche suppliers [Nagle, Maughan, 2007, p. 42] so that the best solution can be identified for a company’s needs. And contracting with best-of-breed suppliers creates competition that enables increasing the quality and the creation of innovative solutions [Sobińska, 2009b, p. 200].

Increase of the service level was an important goal for Chevron, as well as an access to knowledge exchange through better career opportunities for their information technology professionals. In multisourcing, suppliers exchange knowledge not only with the client company but between themselves as well [Sobińska, 2009a, p. 521].

Multisourcing is used to innovate, learn, take advantage of changing trends and technologies, and align technology with business needs, as in the case of Nissan. It is also a chance to demand improvement initiatives [Cohen, Young, 2005, p. 201], to receive
quality over a long time [Bielewicz, 2008], and to acquire new knowledge of internal processes, market mechanisms, and traits of the suppliers. All these motives can be classified as acquiring, using knowledge, and improving processes (excellence).

According to theory as well as multisourcing literature and practice, companies decide for multisourcing due to external motives. Cohen and Young [2005] point out conditions in the environment that trigger multisourcing [Cohen, Young, 2005, p. 96]. They are globalization and advances in technology and communications, which allowed outsourcing of new kinds of services. Clients were diversifying and expanding locations from which they purchased services to the emerging countries to benefit from skills and lower cost and to mitigate concentration risk [Palugod, Palugod, 2011, p. 16]. In the new conditions, companies were seeking for competitive and cost advantages, and outsourcing helped them to act quickly: they changed, standardized, and became cost effective [Cohen, Young, 2005, pp. 6–7]. Kulesza [2010] also relates the birth of multisourcing to changes in the IT market, that is, to the dynamics of purchasing and using the services, both from internal and external sources. Companies multisource to sign more flexible agreements for customized services [Kulesza, 2010] to cope with the changing needs of their clients. In the highly competitive economy, long-term relationships between firms are less possible because the market and competencies of firms change quickly [Bielewicz, 2008].

Second, globalization helps with the availability of suppliers. Rarely is one firm able to deliver quality over a long period [Bielewicz, 2008]. And the more complicated the service, the more difficult it is to find one supplier able to provide it comprehensively. Nissan started to multisource to handle increased competition in its segment and to take advantage of better availability of vendors [Thibodeau, 2006a]. If the market does not include enough suppliers with the specialist skills needed for the buyer, they have no chance to choose the best-of-breed [Kobayashi-Hilary, 2006], while in the global market there is more of a possibility to select the right supplier [Bielewicz, 2008]. Thus external conditions motivate firms to handle changes as well as to take advantage of them.

Conclusions: a model classifying motives for multisourcing

Case studies and multisourcing literature confirm the classification of motives proposed after the review of theory in the research proposal. The study has identified the following motives for multisourcing in IT: uncertainty bounding, access to resources, preparedness, effectiveness, learning, and external motives. It also explained the development of each motive, adding a practical perspective to the classification. The most important motives based on the frequency of being mentioned by firms include effectiveness, preparedness, access to resources, and uncertainty bounding.

The most interesting findings, which were not inferred from the theoretical literature, include the importance of increasing the service level and better career opportunities for
IT employees as part of the motive of learning and access to resources. The importance of cost effectiveness is contrary to what was expected in the theory review section, which suggested synergy and value effectiveness as the aim of multisourcing. It is also worth mentioning that the motive of lowering transaction costs, which was excluded based on the literature, in fact did not appear in testimonials of firms. The motives and their developments identified in the study are presented in a model in Table 5.

The fact that two out of the six motives (i.e. effectiveness, preparation) demand that the company strives for the success of multisourcing lead to a conclusion that this relationship is very complex. Thus, it is possible to forecast that many of the attempts at multisourcing will fail and that not all companies will try this form of cooperation. At present it seems to be more suitable for large multinationals.

**TABLE 5. Model classifying motives for multisourcing**

<table>
<thead>
<tr>
<th>Motive for multisourcing (based on theory)</th>
<th>Development of the motive (conclusions from practice)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncertainty bounding</td>
<td>Independence, easier to change one of suppliers</td>
</tr>
<tr>
<td></td>
<td>Lower risk, higher security and (system) safety</td>
</tr>
<tr>
<td></td>
<td>Implementing improvements, fixing previous mistakes, better control</td>
</tr>
<tr>
<td>Access to resources</td>
<td>Access to capabilities</td>
</tr>
<tr>
<td></td>
<td>Access to better service delivery level</td>
</tr>
<tr>
<td></td>
<td>Access to niche/specialized suppliers and non-standard services</td>
</tr>
<tr>
<td></td>
<td>Leveraging strengths of suppliers</td>
</tr>
<tr>
<td>Preparedness</td>
<td>Preparedness at arrangement phase (Process maturity and firm preparedness)</td>
</tr>
<tr>
<td></td>
<td>Preparedness at management phase (Ability to coordinate multiple suppliers)</td>
</tr>
<tr>
<td></td>
<td>Preparedness at monitoring phase (Measurement of the relationship)</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>Cost advantages</td>
</tr>
<tr>
<td></td>
<td>Higher value</td>
</tr>
<tr>
<td>Learning</td>
<td>Acquiring knowledge (new knowledge of internal processes, market mechanisms, technologies)</td>
</tr>
<tr>
<td></td>
<td>Using knowledge (using knowledge and skills of suppliers)</td>
</tr>
<tr>
<td></td>
<td>Excellence (chance or improvement initiatives; augment skills and boost innovative capacities, benchmarking, service quality)</td>
</tr>
<tr>
<td>External motives</td>
<td>Taking advantage of globalization, advances in technology and communications, availability of best in class vendors</td>
</tr>
<tr>
<td></td>
<td>Handling external conditions (changing demand for competencies, quality, innovation and flexibility)</td>
</tr>
</tbody>
</table>

Source: own elaboration.
Final remarks, recommendations and implications

Multisourcing is getting more significant, and this article helps to understand what motivates companies to start this form of cooperation by proposing a model for classification of motives for multisourcing. Knowledge of the motives has important practical implications for companies which take decision on the service supplier strategy as well as for advisory bodies to recommend or dissuade multisourcing. It can be advised to a firm when it considers supplier strategy and looks for ways of lowering uncertainty, acquiring resources, learning, effectiveness, taking advantage or handling external conditions, and is prepared for multisourcing. This last motive is especially important to be able to realize benefits connected with this difficult form of cooperation. Knowing what to expect from multisourcing also helps its successful implementation, as firms need to turn their goals into measurable indicators and monitor them in order to be able to react if they fail to perform adequately. The main theoretical implications include increasing the understanding of the multisourcing phenomenon and offering a fertile standpoint for future research. The research helped in understanding not only what firms expect from undertaking multisourcing, but also the reasons for its complexity. It would be worth conducting a similar study in multiple industries to identify company- and sector-specific motives. It would also be worth verifying the identified motives in a quantitative study. Only by knowing motives it is possible to study effects: that is, whether multisourcing meets the expectations of firms. Finally, by knowing motives and circumstances, one can understand why this form of cooperation is chosen, and hypothesize on its future development. As external conditions become more turbulent, and firms are expected to be more effective, multisourcing is expected to grow in the coming years, provided that companies are properly prepared for this form of cooperation.

The study also has its limitations because the case study method has some weaknesses. Case study data can be vulnerable to subjective interpretations and may not produce comparable, generalizable datasets [Leonard-Barton, 1990]. To counteract this, triangulation of data, the use of multiple case studies, and references to theoretical background were used.

Multisourcing answers the demands of companies and the market for greater flexibility, higher quality, dynamics, knowledge, specialization, all done with decreased risk. It also takes advantage of globalization and development of IT technologies and communications, but also includes a willingness to reduce risk in more difficult economic conditions. Therefore, its further development is very possible in the years to come, providing fertile ground for further research. On the other hand, it also creates challenges to coordination and induces higher costs. Therefore, knowing the motives for multisourcing should help companies decide in favor of this form of cooperation. This article is a step towards that goal.
Motives for multisourcing in the IT sector

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Selected success factors of virtual teams: literature review and suggestions for future research  

Abstract  

The aim of this paper is to extend the knowledge about virtual teams and above all to stress the differences between face-to-face and virtual teams as well as to define its chosen success factors. This paper is based on an extended literature review of virtual teams. The author describes virtual teams, reasons for their implementation and four factors that are prerequisites for team success. 

The first finding is that the successful introduction of a virtual team and its management requires knowledge about the special characteristics of this team and the effective handling of challenges. Second, the literature review of virtual teams reveals a lack of research on the differences in motivation between face-to-face and virtual teams. The originality of the article is ensured by selection of the most important factors which, according to the literature review, lead to the success of virtual teams and by a description of areas that need to be explored in the future. 

Keywords: virtual team, team building, trust, communication, leadership  

Virtual team definition  

Despite the fact that virtualization is becoming more popular, there is no commonly used definition of virtual teams; authors vary in their interpretation of this phenomenon [Nader et al., 2009]. Virtual teams are mostly described as a group of people contributing to accomplish a common goal. Such a description is rooted in the team definition where traditional teams are defined as “small groups of independent individuals who share responsibility for outcomes” [Hollenbeck et al., 2012, p. 82]. The most important difference appears to be the fact that a virtual team is a group of geographically distributed participants who can be dispersed around different countries or within one country.
other difference is a strong reliance on communication and information technology as part of a daily exchange of information [Piccoli, 2003].

Another definition states that a virtual team “consists of a group of people who collaborate closely even though they are separated by space (including national boundaries), time, and organizational barriers” [Stough et al., 2000, p. 377]. In such a case the requirement of virtualization is that the team does not work as a collocated team. Another proposal is to extend the definition of technology usage and goal completion. Virtual teams are then presented as “groups of geographically, organizationally and/or time dispersed workers brought together by information technologies to accomplish one or more organizational tasks” [Nader et al., 2009, p. 2654]. Virtual teams are also defined as “teams whose members are geographically distributed, requiring them to work together through electronic means with minimal face-to-face interaction” [Malhotra et al., 2007, p. 60]. Generally, there are teams working without face-to-face contact and there are others who meet rarely [Bjorn, Ngwenyama, 2009]. Some authors even narrow their definitions to naming specific types of virtual teams. Among others, one can distinguish work, functional, production, project or product development, networked, and parallel teams [Duarte, Snyder, 2006; Nader et al., 2009].

The author of this article shares an understanding of the virtual team with Malhotra, Majchrzak and Rosen [2007]; the time separation is not as important as working from various localizations with limited face-to-face contact and a strong reliance on computer-mediated communication.

**Reasons for introducing virtual teams**

A few decades ago, it wasn’t foreseen that people would work together on the same projects while being scattered around the globe [Kanawattanachai, Youngjin, 2002]. Today, virtualization is not only a term used in science but a part of everyday life shared by millions of people. According to Brenowitz [2003], the probability of working on a virtual team is close to 100%, regardless of the chosen career path. Many market-recognized companies owe their success to introducing virtual teams, among them Hewlett-Packard, Xerox, Procter & Gamble, General Motors, and General Mills [Griffin & Moorhead, 2012]. Among the most important factors triggering the change are: globalization [Barkema, 2002; Bergiel et al., 2008]; introduction of the internet [Bergiel et al., 2008; Hertel et al., 2005]; high-speed technology development [Trzcieliński, Wypych-Żółkowska, 2002]; demanding customers who are interested in fast delivery of high-quality goods [Nader et al., 2009], and high costs of fuel. In order to stay competitive and gain advantage over others, organizations need to rethink their operating strategies (see Graph 1).
By implementing virtual teams, companies gain the opportunity to exchange experience and knowledge with people who normally do not work at the same office (or even in the same country) [Kirkman et al., 2002]. Among other advantages of virtual teams we could include: cost reduction [Minkin, 2008; Robb, 2002; Trzcieliński, Wypych-Zółkowska, 2002; Bergiel et al., 2008], increasing innovativeness, creativity [Nader Ale Ebrahim et al., 2009], and, eventually, an increase in company profits [Kimble, 2011]. These are the reasons virtual teams have become a meaningful part of organizational structures, to the extent that “over half of all professional employees are believed to work or have worked on a virtual team” [Wakefield, Leidner, 2008, p. 434].

Furthermore, factors leading to introduction of a virtual team can be divided into direct and non-direct. Direct factors are cost reduction and the opportunity to create teams consisting of specialists from various expertise areas who are not limited by localization. The non-direct factors are those connected with globalization and thriving technological progress.

**Differences between virtual and face-to-face teams**

Virtual teams, in comparison with traditional ones, are believed to be “transcendent” [Stough, et al., 2000]. This means that the extensive use of telecommunication technology allowed them to overcome barriers of distance and time. Moreover, they are able to work with each other synchronously or asynchronously via voice mail, audio conferences, e-mail, bulletin boards, real-time data conferences (no audio/video), videoconferences without shared documents, real-time data conferences with audio/video and text graphics, electronic meeting systems with audio/video, text and graphics, and collaborative writing with audio/video [Brown et al., 2007]. However, there are teleconferences, webinars, groupware, Skype and other voice-over-Internet-protocol (VoIP) applications that are commonly used in the communication process [Ubell, 2010]. The effectiveness of communication is greater when using a larger number of tools that can be diversified.
According to Nader [2008, p. 2661], three groups of communication tools can be distinguished for virtual teams: synchronous (e.g. remote access and control, web conferencing), asynchronous (e.g. groupware/shared services, file transfer, e-mail), and synchronous or asynchronous (e.g. instant messaging and chat, telephone).

Obviously, these methods are also common for traditional teams. Nevertheless, the role of these techniques on traditional teams is different. They only support the process of information transfer between team members, enhancing group work, and they do not replace the role of face-to-face meetings. On a virtual team, computer-mediated communication is often the only way to reach other team members.

Virtual teams gather experts from different specializations and with various types of experience. As was already mentioned, virtual teams are not limited by their localization; due to this fact they are able to work on a 24-hour cycle [Minkin, 2008]. As a consequence of operating around the globe, there is the advantage of a theoretically unlimi-

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**GRAPH 2. Advantages and challenges of work in a virtual team**

<table>
<thead>
<tr>
<th>Team members in virtual teams</th>
<th>Management and communication issues:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teams consisting of members:</td>
<td>• Cultural differences</td>
</tr>
<tr>
<td>• From different areas of expertise</td>
<td>• Different expectations and work habits</td>
</tr>
<tr>
<td>• From different locations</td>
<td>• Working in different time zones</td>
</tr>
<tr>
<td>• Having different experience</td>
<td>• Lower managerial control and monitoring – internal motivation pays higher role</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Distance handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost savings in terms of money and time:</td>
</tr>
<tr>
<td>• Business trips</td>
</tr>
<tr>
<td>• Commuting to work</td>
</tr>
</tbody>
</table>

| VT ADVANTAGES + MANAGEMENT OF VT CHALLENGES => CREATIVITY | EFFECTIVENESS | PROFITS |

Source: Prepared by the author.
ted number of members working on the project. The use of information technology significantly reduces the cost of collaboration and enables many people to share responsibility while working on the same documents [Duarte, Snyder, 2006]. The unlimited number of virtual team members leads to the next difference: their anonymity. Depending on the situation, it can be an advantage or a disadvantage. This means that the virtual team members can be more open in stating their opinions, because their identity is not known, or they can avoid contributing to team work. As a consequence, the social loafing phenomenon can occur, which means that people can perform worse on a simple task when working on this type of team.

An analysis of these differences leads to the most pivotal aspect: the lack or limitation of face-to-face contact. When communicating face-to-face, part of the information is exchanged in a non-verbal manner. Such information is lost when people who are communicating do not meet in person, and must rely to a great extent on written or voice communication. Limited face-to-face contact and exchange of information through computer-mediated tools can result in many problematic issues. It can be inconvenient to team members and result in unpredictability and misunderstandings, as well as lead to stressful situations. As one of the disadvantages of working virtually, the authors point out the lack of physical interaction, which is connected with lack of verbal and non-verbal cues [Kirkman et al., 2002].

**Success factors of virtual teams**

Polish experts were asked to rank success factors of a virtual team on a 44-point scale. They found that the most important factor for success is trust between collaborators (40 points). In second place were collaborators’ openness for communication, fast feedback between collaborators, and honesty and clearness of communication (all three received 39 points). These factors were followed by communication via Internet (38 points), format of interexchanged data and failure of the communication system (37 points) [Hejduk et al., 2008]. These results were confirmed by another survey: namely, the respondents were asked about the top six factors to ensure success of a virtual team. The results of this survey showed that to achieve success, the following elements need to take place: team leadership (86%), trust (65%), team building and development (48%), company support of virtual teamwork (43%), face-to-face meetings (29%), and technological training (20%) [Hawkrigg, 2007, p. 16]. Another author points out the importance of “a high level of trust, clear communication, strong leadership, appropriate levels of technology” [Bergiel et al., 2008, p. 100]. On the minus side, the main challenges of virtual teams are listed: “lack of physical interaction, loss of face-to-face synergies, lack of trust, greater concern with predictability and reliability, and lack of social interaction” [Nader et al., 2009, p. 2660].
The literature review of factors increasing the effectiveness of traditional teams leads to the conclusion that the authors have often pointed out: trust, clear goals and support of objectives from the management, leadership, team member competencies, experience, and task division. Table 1 presents detailed information.

### Table 1. Factors enhancing effectiveness in teams by authors

<table>
<thead>
<tr>
<th>Authors</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borrelli, Cable and Higgs, 1995, p. 30</td>
<td>“team balance, leadership, team to team, overcoming hurdles, autonomy, shared understanding of goals, recognition, full circle feedback”</td>
</tr>
<tr>
<td>Brenowitz, 2004, p. 244-246</td>
<td>support from management, right definition of team's goals, operational framework for work, responsible, trusted and professional team members</td>
</tr>
<tr>
<td>Parkinson, 2002, p. 111-122</td>
<td>trust, awareness of: team's goal, tasks, available resources, measure of the result and the team's success definition, appropriate task division between team members</td>
</tr>
<tr>
<td>Prohl, 1997, p. 139</td>
<td>strong and compelling performance challenge, clear goals and objectives, participative leadership, good communication based on trust, honesty and respect for other, willingness to deal with conflict, good coordination, appropriate task division between team members, consensual decision making</td>
</tr>
<tr>
<td>Wszak in Natale et al., 1998, p. 178</td>
<td>clear mission, experts engagement, previous experience in “team working”, the eagerness to become a team member, effectiveness of group processes, balanced level of used technology</td>
</tr>
<tr>
<td>Peckham, 1996, p. 26</td>
<td>clear objectives, motivation by objectives, competences of the team, common engagement, cooperation climate, appropriate support and resources, management</td>
</tr>
<tr>
<td>Morris and Mountfort, 1997</td>
<td>interaction, philosophy, motivation, resources</td>
</tr>
</tbody>
</table>

Source: Prepared by the author.

The analysis of challenges in virtual teams, as well as research on virtual teams’ success factors and factors enhancing the effectiveness of traditional teams, leads the author to choose four aspects as the most meaningful for a virtual team’s success: team building, trust, communication, and leadership. In the author’s opinion those factors are crucial for management of challenges in a virtual team and basic for the team’s success. Such a division proposed by the author is conventional and selected elements are interrelated, since trust and communication are elements of team building and at the same time team building involves leadership. Selected factors are important for each type of team, not
only for virtual teams. However, distance, anonymity, and lack of face-to-face contact especially affects virtual teams by challenging team and trust building as well as leadership, and by disrupting communication (see Graph 3).

**GRAPH 3. Dependencies between four factors leading to success of virtual team**

![Graph](source)

Source: Prepared by the author.

**Communication.** Researchers from Swiss Institute of Technology conducted “tele-management” studies which showed that the most common problems when “working virtually” are not connected with technology but with interaction between people, particularly with communication [Kurda, p. 17]. Most of all, people suffered from lack of information about the work process and lack of knowledge about the others in a team. Communicating problems can occur because of the communication economy; information is being communicated when the advantages of that process are greater than the costs of communicating it. It is important to stress that the low quality of communication, its reliability and unpredictability was a problem for many respondents. Even more critical, members of the virtual teams can suffer from lack of informal communication. It can result in a feeling of social isolation and a low level of trust, both between manager and team, and among team members. Communication should be treated as the most crucial task for virtual organizations because it provides efficiency and transparency [Warner, Witzel, 2005, p. 173]. It can be also extended to virtual teams. Most importantly, the effective communication enhances exchange of knowledge, increases job productivity, improves the processes of decision making, and decreases uncertainty. An analysis of deterministic technology theory, or the cues-filtered-out approach, leads to the statement that communication in computer-mediated teams can be a source of problems due to the fact that the non-verbal (i.e. visual) and para-verbal (i.e. auditory) cues are limited or they do not exist. Information can be lost due to use of specific communication channels, reduction of social presence and conventional involvement, or because communication does not transmit information about social standing and
social context. Furthermore, virtual communication is more time-consuming and more confusing: “for example, typing takes four times longer than speaking” [Purvanova, Bono, 2009, p. 344].

Virtual team members also complain about delays in getting fast responses and problems with understanding some messages, especially when the author is attempting to be sarcastic [Hunsaker, Hunsaker, 2008]. Such communication problems stem from a lack of opportunity to take advantage of informal meetings, limited possibilities of engaging in spontaneous communication, and reduced non-verbal cues about interpersonal affectations. In such a situation, the recommended solution is to set some communication conventions: defining the time within which the e-mails should be answered, using agreed technology to monitor the commitment of team members, setting deadlines for the preparation of tasks [Brown et al., 2007; Hunsaker et al., 2007]. Another useful tactic is to send in the messages not only the task but also social information: jargon, pictures, symbols and other shortcuts. With such an approach, the computer-mediated communication is enriched and the distance to face-to-face communication is smaller.

The communication constraints in virtual teams lead to confusion about a team’s status at any given point in time. To cope with this problem, virtual leaders should periodically facilitate intra-team communication. This will help to create a “consolidated picture of the status” [Huang et al., 2010, p. 1099]. Virtual teams have to be proactive about communication, avoid jumping to conclusions, establish a clear escalation path, and maintain a sense of humor [Brown et al., 2007, p. 21]. There are calls as well for the preparation of special guidelines on communication processes and even protocols. The researchers stress the communication plan or schedule should include information on when people can get together on the phone protocol, which information to share, which communication method to use for each of these, how the teams are expected to communicate, and how often. It is also advisable to clarify which tools are preferred for the various types of interaction, as well as to discuss the guidelines for inter-team communication. Clearly, this would help to avoid misunderstandings and improve the way information is shared.

The communication process in virtual teams can be divided into formal and informal. Formal communication refers to the assessment of the needed data and data privacy. It is also about the delivery of information necessary to complete the job, enabling an employee to work without having to search for it. Second, informal communication is important for conflict management because it reinforces the exchange of information between the team’s participants and helps in managing the project. This is the reason for giving the team an opportunity to get to know each other [Schuka, 1998]. The team members should be given goals that are measurable and concrete, and they should also understand how valuable their job is for achieving a common goal. Moreover, setting up periodic face-to-face meetings for progress reports is also advisable [Brzozowski, 2007;
Leading virtual teams, 2010]. One factor that endangers communication is the presence of cultural differences between the team members and the required communication language [Bergiel et al., 2008]. “National diversity creates different expectations for communication practices and reduces identification with the team as a whole” [Schlenkrich, Upfold, 2009, p. 112]. In case the virtual team consists of members from different cultures, the manager should try to diminish misunderstandings by introducing cultural training.

The literature review confirms that communication is one of the most difficult problems in virtual team management. What needs to be emphasized is that the inconveniences are not caused by usage of different technology or different tools but by the organization of communication, e.g. the communication program.

**Trust.** Trust is one of the social norms and is developed with the team’s development. The atmosphere of trust enhances information flow, improves cooperation, and helps to overcome problems and conflicts as well as reach team goals [Prati et al., 2003). In traditional teams, work is mostly controlled by the authority system in which a supervisor delegates tasks and oversees employees when they are working. In a virtual environment, such system is no longer possible; trust takes over the role of control. This means that employees need to trust each other in order to risk that others will not be acting in their own interests instead of team interest [Peters, Manz, 2007]. This is the main reason why trust is believed to be one of the most crucial elements enhancing a virtual team’s success [Mancini, 2010]. In traditional teams employees are mostly working in the same office or even open space, and are informed about their peers’ work progress. If they lack such information, it is always easier to attain it than in virtual team settings.

The issue of trust within virtual teams was studied by many researchers [Bergiel et al., 2008; Jarvenpaa et al., 2004]. According to the studies’ results, perceptions of teammates’ abilities, integrity, and benevolence are seen to be fundamental for establishing trust in virtual teams. The first two factors may be more important than benevolence [Jarvenpaa et al. 1998]. Some authors state that trust is created by various factors within the team life cycle. Initial trust is determined by both intrinsic signals and external factors, namely reputation, roles and rules. During the first phases of team cooperation, team members have the opportunity to assess mutual ability and integrity, and on such a basis cognitive trust is developed [Greenberg et al., 2007]. It is important to signal that dispersal of team members can result in a low level of trust and cooperation, which will affect the team’s performance [Piccoli, 2003]. Authors deliberating virtual team management agree that managers should concentrate their efforts on trust development, because the lack of face-to-face communication is a real limitation to the introduction of trust. The development of team commitment and engagement seems to be more demanding and require more effort than in face-to-face settings. Surprisingly, studies suggest that trust can be developed in virtual teams that do not have a history of cooperation [Piccoli, 2003; Greenberg et al., 2007]. This trust is fragile and can easily
deteriorate, and its maintenance during the team life cycle is difficult. It has also been confirmed that the lack of face-to-face communication and problems with information exchange can lead to an incongruent perception of team commitments, which can eventually result in a decline in trust. The most important problems with trust arise before the project deadline, when attention is high. During this phase reneging and incongruence can decrease trust. To avoid such a situation, it is advisable to introduce one person who will be responsible for coordination of information exchange, assuring that team members are aware of individual roles, relationships, and responsibilities. The presence of such a person will sustain the team’s trust and protect against incongruence [Piccoli, 2003]. The assessment of trust will be also influenced by communication patterns and incentive schemes.

In order to enhance trust, managers should communicate team members’ responsibilities, maintain frequent contact, and promote team-related rewards [Antonakis, Atwater, 2002]. It is also believed that the best way to help team members develop mutual trust is to give them an opportunity to meet physically, at least at the beginning of the team’s existence. It is advisable to establish a plan for meetings on a regular basis, perhaps every couple of months. However, conditions of work do not always allow this. In that case, it is important to support employees with a teleconferencing or videoconferencing system. Other methods that should be introduced in order to develop trust are “proactive behavior, rotating team leadership, clarity of task goal, role division, frequent interaction with acknowledged and detailed responses to prior messages” [Stough et al., 2007, p. 377]. These methods encourage team engagement and commitment to the common goal, and bring people together in order to achieve goals. According to another author, trust should be founded on “frequent interaction, shared information, and the development of a joint organizational culture” [Mancini, 2010, p. 2]. Trust is limited to the expectation that one’s own efforts will be reciprocated by other team members and not exploited by them: this is interpersonal trust. The other kind of trust is the trust that electronic support systems are reliable: trust in system. Following the case of Orange, authors noticed the negative effects of a low trust level in virtual teams, which resulted in hindering product development and problems with reaching the company’s goals [Berzgiel et al., 2008, p. 101].

Trust in a virtual team is one of the angles that were studied deeply by many researchers. Yet the author did not find any studies on the relationship between the level of trust and the type of communication used in virtual teams (e.g. periodicity of arranged meetings, interaction between team members, and types of prevailing communication tools). Another interesting and still uncovered issue is a comparison of levels of trust in different types of teams, for example, whether it can be expected that self-managing virtual teams will have a higher level of trust than other types of teams.

**Team building.** During the process of successful virtual team formation, the most important elements are: trust, communication, leadership, goal setting and technol-
ogy [Bergiel et al., 2008, p. 101], providing support, getting acquainted and getting organized [Hasler-Waters, Napier, 2002]. However, the whole process should start with the selection of the right candidates, who will be able to work successfully in virtual reality [Bergiel et al., 2008; Stough et al., 2000; Brown et al., 2007]. This factor is crucial as some people may have difficulties with limited social contact, lack of clearly established work boundaries or using technology-based communication tools. According to the authors, a virtual team member should possess the following features: acquaintance with new media and groupware technology, capability of self-management, self-sufficiency, interpersonal sensitivity and interpersonal trust, and dependability [Hertel et al., 2005, p. 74]. When team members are selected, the next step is to share an understanding of the team's goals and decide on the level of virtualization that will be the most appropriate to achieve these goals [Hertel et al., 2005]. It is also advisable to clarify the team's structure and its place within the whole organization as well as define its roles and responsibilities. This phase also leads to establishing the core team, which will consist of functional leaders from each discipline engaged in the project [Brown et al., 2007]. Moreover, the team should receive support from a team facilitator who will be able to answer the team's questions and help during the problem-solving phase [Hasler-Waters, Napier, 2002]. Addressing the problems of “commitment to the scope of the project, agreement to time schedules, recognition of risks involved, and agreement to share information on a regular basis” will lead to avoidance of many misunderstandings and will contribute to the effective organization of a team [Sookman, 2004, p. 91]. Another way to enhance communication, trust, and cooperation is to set up an operating agreement, which can include meeting protocols (for example, a meetings schedule based on which face-to-face and computer-mediated meetings will be held), describe a communication plan (how often people should communicate and using which methods, how conflicts are resolved, and the way feedback is transferred) and the way decisions will be made (formulation of a decision-making process and selection of people responsible for decision making) [Sookman, 2004]. In traditional teams based on face-to-face contact, the value of such agreements is lower, because team members can ask questions directly and expect timely answers. Moreover, the team also has the possibility to talk about work during informal meetings such as lunch or coffee breaks. The virtual team should be also given a chance to get acquainted with each other. This means more than just learning names; it is about sharing cultural and personal information as well as exchanging information about personal web pages or other sources of information [Hasler-Waters, Napier, 2002; Duarte, Snyder, 2006]. If that is not possible, it is still recommended to conduct at least an initial meeting [Hertel et al., 2005]. The basic function of such a meeting (also in face-to-face teams) is to present expectations, a project schedule, deliverables, and the team's goals. In the case of virtual teams, the opportunity for team building and rapport building gains in importance [Brown et al., 2007]. Nevertheless, such a meeting can be also used in order to develop technology
and communication plans [Duarte, Snyder, 2006]. It has been confirmed that having the opportunity to meet before starting team work facilitates cooperation and trust [Hertel et al., 2005, p. 80]. Studies emphasize that even if a virtual team has access to the newest solutions of computer-mediated technology, face-to-face meetings still have a significant meaning [Kimble, 2011].

There is exhaustive literature covering the issue of team building from different perspectives, e.g., the choice of appropriate team members, the process of the team’s launch, types of the most suitable tasks. However, not as much has been written about internal processes during the life cycle of a virtual team. Future research could focus more on the differences in internal processes of virtual teams, depending on their “level of virtualization”.

**Leadership.** Providing the effective functioning of a team in all of the aspects mentioned above requires an appropriate leadership style. Many functions of virtual team members are different from those commonly used in face-to-face teams; one of them is the lower importance of control function [Nyddeger, Nyddeger, 2010]. More effective than direct leadership in the case of virtual settings is management by empowerment and a shift of the managerial function to team members [Nader et al., 2009].

Importantly, managers need to find a way to prevent such problems as lack of project visibility, difficulty in contact, and technology constraints, which particularly lead to the lack of physical interaction, loss of face-to-face synergies, lack of trust, greater concern about predictability and reliability, and lack of social interaction [Hunsaker, Hunsaker, 2008, p. 89]. They also have to handle the implementation of common goals, anonymity, limited social control, reduced feedback, and trust building. Appropriate leadership is especially significant when the problem is raised of challenges to the motivation of physically disconnected workers.

When various types of leadership are taken into account, it seems that the best results can be achieved when transformational leadership is introduced. Transformational leaders are those who provide their employees with vision, stimulate their followers intellectually and expect high performance [Den Hartog, Belschak, 2012]. According to research, transformational leadership gains meaning especially in teams which are connected only on a computer-mediated basis. The leaders who increase their transformational leadership behavior in such teams achieve higher levels of team performance [Purvanova, Bono, 2009]. To sum up, the implementation of transformational leadership encourages a sense of purpose and introduces certainty.

It is also confirmed that another factor leading to a higher performance is feedback. Moreover, feedback, if based on the social processes, can be a tool for enhancing the process of trust-building and increasing trust, cohesion, motivation and satisfaction, bridging spatial disconnectedness, and preventing a feeling of exploitation. Studies have already shown that regular and prompt communication that provides sufficient detail helps leaders be effective in their work [Kahai, 2007].
Scientists who were engaged in helping organizations arrange virtual teams are of the opinion that motivational tools in virtual teams should be modified. “Virtual teams often have fewer motivators, both perceived and real, to perform than those that commonly exist in face-to-face teams” [Nunamaker, 2009, p. 113]. Another aspect is that employees can be deprived of the informal appreciation, face-to-face contact, and support that is given on a day-to-day basis in traditional teams. The authors state that the reward structure should be based more on team performance [Bal, Foster, 2000, Hertel et al., 2005]. The foundation for the development of the motivation theory within the virtual teams is supplied by Vroom's theory of motivation: Motivation = Valence x Expectancy (Instrumentality). On this basis the VIST Model [Hertel, 2005] was developed, which is believed to explain the motivation within virtual teams. In this model, V=Valence, I=Instrumentality, S=Self-efficacy and T=Trust are predictors of employees’ motivation. Valence is described as the subjective evaluation of the team goals. Moreover, the person is motivated when one's evaluation of the goal is high. Problems occur when the personal interests or other personal goals are in conflict with team goals. The important fact is that the high team identity leads to better evaluation of team goals. Instrumentality is the perceived importance of one's own contribution to the group outcome. When the employee is convinced about his indispensability to the team outcome, it will result in high instrumentality and eventually in better performance. Low instrumentality, on the other hand, leads to social loafing, a situation in which the person puts less effort into the team's work than into individual performance. Ringleman [Kravitz, Martin, 1986] has studied that phenomenon by asking people to pull a rope individually or in teams. The result was that people working in group did not work as hard as when each was pulling the rope alone. According to Kožusznik, social loafing negatively influences a team's effectiveness, leading to a decrease of effort by as much as 50% compared with individual performance [2002, p. 115]. The next aspect, self-efficacy, can be described as “the perceived contingency that one's own high effort leads to own high performance” [Hertel et al., 2004, p. 8]. It is crucial to note that a high evaluation of personal capabilities and a low team evaluation will lead to low job motivation; by contrast, low evaluation of oneself and high evaluation of the team results in high motivation. Trust is the last component on the VIST model. It is defined as the expectation that personal efforts will be reciprocated by other team members and not exploited by them.

A model explaining motivation in virtual teams has not yet been confirmed by the studies. The author found only a study on interdependencies between components of the VIST model, performance and satisfaction [Engel, 2004]. Future studies on virtual teams should concentrate on verification of the VIST model and a definition of factors motivating virtual teams. Lack of direct contact with the manager or supervisor and dispersion of the team's members may require specific motivational factors. In parallel, the research on differences between motivational factors in virtual and face-to-face teams could be studied.
Summary

Companies are increasingly eager to use virtual teams because there are various advantages of turning to virtualization. The most important advantages are cost reduction, the possibility to work internationally, using the knowledge and experience of experts located all over the world, more rapid and effective decision-making processes, and a greater degree of freedom among people engaged in the project. However, working virtually is a source of real challenges resulting from a lack of physical interaction, mistrust, a decrease of monitoring and control activities, and difficulties with distant management. Researchers are following current trends on team management and are studying extensively the issue of virtualization.

The literature review on virtual teams leads to the statement that much attention was paid to the problem of trust and communication. However, the relationship between different types of communication methods (e.g. prevailing communication tools, communication periodicity, communication protocol) and the level of trust has yet to be studied. It could be assumed that teams who communicate more often and have clear rules of communication will be characterized by a higher level of trust in comparison with teams who communicate seldom and do not have set rules for communication. Current research does not address the issue of differences in the level of trust between various types of virtual teams, e.g., problem-solving teams, project teams, and self-managed teams. Teams that would be given more empowerment could report a higher level of trust.

Many studies were also devoted to the issue of team building, i.e. the selection and launch processes, setting goals, and dividing tasks between team members. In comparison with the research on face-to-face teams, there is not much written about the team-building processes in virtual teams. It could be expected that they vary from the processes which occur in traditional teams. It would be worth studying if those processes change depending on the level of virtualization and how significant are those differences.

Studies on leadership in virtual teams lead to selection of the most suitable management style, draw attention to managers’ tasks, and highlight the importance of feedback. Researchers have developed a model explaining motivation in a virtual team - the VIST model - however, the model has not yet been verified. Future research should concentrate on model verification as well as on the identification of factors which motivate virtual teams. When the motivational factors are defined, then it will be possible to compare them with motivators of face-to-face teams. To conclude, it can be stated that there is not as much research on motivation in virtual teams as there is on team building, communication, or trust.
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**The effects of corporate social responsibility initiatives and price premiums on Polish consumers’ responses: an experimental study**

**Abstract**

This article explores whether, how and which forms of corporate social responsibility (CSR) initiatives influence consumer perceptions of the value of and intention to buy responsibly manufactured yogurt, and identifies the impact of the price rise effect on consumer responses. An experimental study was conducted using scenarios with a sample of 421 university students. The results indicate that information about positive corporate behavior evokes higher perceived value and buying intention than information about negative corporate behavior; that responses differ significantly depending on whether or not the CSR initiative relates to the firm’s core business; and that there is a level of consumer sensitivity to the price premium for a responsibly made yogurt. This study expands existing knowledge beyond previous areas of focus by demonstrating that a CSR initiative related to a firm’s core business generates higher perceived value and buying intention than a non-related initiative, and by showing that there exists a trade-off between functional and social attributes. The findings of this study may be of interest to companies by showing the level of premium price acceptance and by demonstrating that CSR initiatives detached from basic business activity may bring negative consequences in terms of sales volume.

**Key words:** corporate social responsibility, consumers, Poland

**Introduction**

The Corporate Social Responsibility (CSR) concept has attracted significant attention in the academic literature [Carroll, 1999; Garriga and Mele, 2004]. Many companies (especially multinational corporations) around the world engage in CSR initiatives and imple-
ment CSR standards involving significant financial resources. These enterprises count on positive reactions from their stakeholders, especially customers, as their concern grows about the natural environment and social issues. Identification of those CSR initiatives which are valued and those which are not valued by customers may have important practical implications and may provide explanations for the discrepancy between supply of and demand for CSR. Therefore, the following questions arise: does the fact that the company implements social responsibility imply that consumers perceive it as an additional value? And how are different kinds of CSR actions perceived by consumers?

Many empirical studies have been conducted in the developed economies (mainly the United States) in the area of consumer behavior with respect to CSR. The results show that consumers, in general, positively evaluate companies’ use of CSR, but not all forms of it are perceived equally. Different issues that may influence support for CSR have been investigated including type and domain of CSR initiatives [Mohr and Webb, 2005; Sen and Bhattacharya, 2001], attribution and strategic positioning (corporate ability) [Brown and Dacin, 1997; Du, Bhattacharya, and Sen, 2007], price differentials [e.g., Auger, Burke, Devinney, and Louviere, 2003; Elliott and Freeman, 2001] and socio-demographic, personal traits, and personal support for CSR issues [e.g., Bhattacharya and Sen, 2004; Sen and Bhattacharya, 2001]. However, research remains limited in the context of delivered value to customer as well as in the context of post-socialist countries. The aim of this study is to investigate how different forms of CSR initiatives create value for customers and influence their buying intentions. Additionally, this paper makes an attempt to verify existing knowledge in the area of consumer behavior with respect to CSR. To achieve these objectives, a quantitative research was conducted over a four-week period in 2012.

This paper is organized in the following manner. First, it reviews the concept of corporate social responsibility and the focal construct of perceived value. Then, research hypotheses are developed. Next, research design and data collection procedure are provided and research hypotheses are tested. Finally, results are presented and discussed, followed by a description of limitations of the study, implications for business practice, and suggestions for future research.

**Theoretical background**

The issue of social responsibility of business is a widely discussed topic that has been gaining momentum since the 1990s, to the point where it is now a commonly accepted stand [Carroll, 1999; Lee, 2008; Moura-Leite and Padgett, 2011]. This viewpoint stresses the social welfare aspect as a parallel goal of economic development which is understood not only in economic but also in social and environmental terms. Specifically, business activity should fulfill the conditions of the triple bottom line (TBL) and
its effectiveness is defined on the basis of the three dimensions (pillars): economic (profit), social (people), and ecological (planet) [Brown, Dillard, and Marshall, 2006; Elkington, 1999]. This view has been conceptualized in the management literature as corporate social responsibility (CSR). It goes beyond the short-term classic economic vision according to which managers are responsible solely for maximizing shareholder value [Friedman, 1970; Levitt, 1958]. The popularity of the concept has led to a proliferation of CSR principles, guidelines, standards and cause-related marketing phenomenon. Mohr, Webb, and Harris [2001:47] define CSR as “the organization’s commitment to minimizing or eliminating any harmful effects and maximizing the long-run beneficial impact on society”. CSR links conceptually business and society in the sense that company is engaged in voluntary actions aimed at enhancing society’s well-being. Carroll [1979, 1991] put in order different aspects of the concept by introducing the model of corporate social performance (CSP) containing a four-part definition of CSR, which has become a leading paradigm in the field, making it useful for theorists and practitioners [Schwartz and Carroll, 2003]. It involves four dimensions of the organization’s responsibility (economic, legal, ethical and discretionary/philanthropic), four levels of responsiveness (reaction, defense, accommodation and proaction) and involves social issues (e.g. environment, consumerism, shareholders). This study adopts Carroll’s framework according to which CSR engagement is understood as proaction (“going beyond” the objective of making a profit and obeying the law), therefore fulfilling ethical (expected by society but not codified) and/or discretionary/philanthropic responsibilities (not expected by society but contributing to social well-being, i.e. business contributions of financial resources) and engaging either in environmental or in community (societal) issues. Negative corporate behavior is defined as not abiding by the law and being socially or environmentally irresponsible. Both positive and negative corporate behavior is assumed to be recognizable to consumers.

The pursuit of assuring social welfare and environmental protection when performing business activity has raised the question of the extent of corporate profitability by implementing the concept in practice. In search of an answer, numerous empirical studies have investigated the relationship between CSR and corporate financial performance (CFP) [Margolis and Walsh, 2003; Orlitzky, Schmidt, and Rynes, 2003]. Findings have been equivocal (McWilliams and Siegel, 2001), discouraging managers from treating spending on CSR as investment rather than cost [Mohr and Webb, 2005]. It is posited that involvement in CSR may enhance CFP and lead to competitive advantage, if it is accepted by consumers and if it offers something in exchange - be it in emotional, social, or functional terms [Green and Peloza, 2001].

McWilliams and Siegel [2001, 2011] argue that CSR, as part of a differentiation strategy, may enhance the company’s reputational value. Due to the “halo effect”, it may be transferred to its products by creating a non-traditional product feature. When competi-
tive products or services are similar in terms of functionality, service, and price, a company may distinguish itself by engaging in CSR that may add value to customers and thus, may gain a competitive edge.

Perceived value, the focal construct of this study, is conceptualized as the subjective evaluation of the utility of a product by a consumer [Zeithaml, 1988] and reflects cost-benefit analysis: a mental comparison of sacrifices that the customer needs to incur and benefits he gets [Dodds, Monroe, and Grewal 1991; Zeithaml, 1988]. Marketing literature emphasizes that customer value involves not only functional but also altruistic aspects of the product [Bhattacharya and Sen, 2004; Holbrook, 1994; Smith, 1996]. For instance, Green and Peloza [2011], based on Sheth, Newman, and Gross's [1991] typology, found that CSR may constitute emotional, social, or functional value - or their mix - to consumers. Functional value differs from emotional value in that it generates perceived utility through functional, utilitarian or physical product attributes as opposed to feelings induced or enforced by aesthetic causes [Sheth et al., 1991]. Valenzuela, Muli, and Jaramilho [2010] found that the ethical level of a company is positively associated with the perceived value. The main research question of this study is, therefore, whether CSR initiatives constitute value as perceived by the customers and whether such initiatives influence their buying intentions. Also of interest is whether increase in the price of responsibly produced goods significantly affects consumer responses.

Hypotheses development

Prior research suggests a positive impact by CSR on consumer responses. For instance, Brown and Dacin [1997] found that a high CSR level of a company had an important impact on consumers’ favorable opinions about the firm when corporate ability (CA) was also high. These results were confirmed in studies by Auger, Burke, Devinney, and Louviere [2003], Mohr and Webb [2005], Tian, Wang, and Yang [2011], and Wang [2011]. Mohr and Webb [2005] also showed that negativity bias was more intense than positivity bias; the information about positive CSR did not significantly raise the evaluation of the company and the respondents’ buying intentions, while information about a negative CSR did, compared with the control group. This effect was also reported in other studies [Creyer and Ross, 1996; Sen and Bhattacharya, 2001]. Surveys in the Polish context suggest that information about a firm’s involvement in human rights and ecological issues influences consumer purchasing decisions [Koszewksa, 2011; MORI, 2009; Panel CSR, 2011]. Respectively, more than half [Panel CSR, 2011] and 70% [Koszewksa, 2011] of consumers declared that they would resign from buying a product (given the same price and quality), if they knew about negative ecological or social practices of a company. Based on these results, the following hypothesis is offered:
Hypothesis 1: Information about a high level of CSR:
(a) leads to higher perceived value and buying intention than information about a low level of CSR in the societal and ecological domains,
(b) has a weaker impact on perceived value and buying intention than information about a company’s low level of CSR in the societal and ecological domains.

Since it became obvious to managers that addressing CSR issues is now also an economic imperative, the question of “whether” has shifted to “how” to handle it [Smith, 2003]. However, as Bhattacharya and Sen [2004] note, it is not a straightforward matter as not all kinds of corporate philanthropy or cause-related marketing are viewed equally favorably by consumers. They posit that only those CSR activities that are intertwined with a firm’s strategy, culture and core values may produce positive external and internal outcomes for a company, customer or cause, while attempts to “sell” CSR may have the opposite effect. Du, Bhattacharya, and Sen’s [2007] empirical study on existing brands of yogurts sheds some light on this issue. They found that American consumers’ reactions are more favorable toward those CSR initiatives which are “well integrated into a company’s core business activities” [p. 238] than whose which are not integrated. Thus, based on the foregoing discussion and prior research, the following hypothesis is offered:

Hypothesis 2: Given the same quality of products and their price, a CSR initiative related to a firm’s core business leads to greater perceived value and buying intention than a CSR initiative that is not related to a firm’s core business, when CSR level is high.

Since prior research and surveys show positive evaluation of CSR actions by consumers, this may suggest that they are more likely to pay some premium for products from such companies. Experimental studies and surveys conducted outside Poland reveal that absolute willingness to pay a premium for a responsibly made product tends to increase when the price of the product rises. It ranges from an acceptance of an additional $1.56 (on average) for a $1.10 bath soap (142%) [Auger et al., 2003]; an additional $2.80 for a $10 item (28%) [Elliott and Freeman, 2001]; an added $1 [Marymount University, 1999] and $5 [University of Maryland, 2000] for a $20 item (5% and 25% respectively); an added $5 (17%) for a $30 shirt (over half of all consumers) [Ha-Brookshire and Norum, 2011]; a $10.29 premium (15% on average) for $70 athletic shoes with no child labor [Auger et al., 2003]; $10 more (10%) for a $100 pair of jeans [Ferreira, Goncalves Avila, and Dias de Faria, 2010] and 15% more for a $100 item [Elliott and Freeman, 2001]. The Koszewska [2011] survey revealed that 70% of Polish consumers would pay a premium of 5-20% for a textile product, while another surveys show that more than 50% of consumers in Poland are willing to pay more for products from a responsible company without giving any specific amount of money [Mizera, 2011 as cited in Antczak 2011; Panel CSR, 2011]. Based on prior research, the following hypothesis is, therefore, proposed:

Hypothesis 3: Given the same quality and price of fast-moving consumer products, the rise in price of a responsibly made product, respectively by 100%, 150%, or 200%, does not significantly decrease value perceived by consumers and their buying intentions.
Despite consumers’ overall positive attitude toward CSR revealed by the surveys and empirical studies presented above, it is worth investigating whether the CSR attribute is the most influential factor in their buying decision. Are consumers willing to give away functional product attributes to get a non-traditional, i.e. social/CSR attribute? The researcher proposes that functional product features (e.g. its quality, taste, design, container durability) affect consumers’ reactions (perceived value and buying intention) more than non-traditional ones (i.e. CSR attributes). Support for this assertion comes from prior research. For instance, Bhattacharya and Sen (2004) found that when consumers who positively evaluate CSR initiatives are faced with a choice between a product’s quality and its social aspect, they are unwilling to favor the former. Individual and focus group interviews [Boulstridge and Carrigan, 2000; Carrigan and Attalla, 2001; Carrigan, Szmigin, and Wright, 2004] also support this finding. Based on these results, the following hypothesis is suggested:

**Hypothesis 4:** Functional product attributes have a greater effect on perceived value and buying intention than a CSR attribute.

**Method**

(a) **Study design**

To test the hypotheses the experimental study, in the form of a questionnaire using scenarios, was designed as it was extensively used by other researchers and is believed to be the most appropriate method for research in the area of consumer ethics [Auger and Devinney, 2007]. Manipulations concerned the following independent variables: CSR level (low vs. high), type of CSR action with reference to a company’s basic business activity (related vs. non-related), price level (100%, 150% and 200% higher) and functional attribute level (functional vs. non-functional). The number of respondents that were randomly assigned to each group ranged from 31 to 43.

Twelve scenarios were created. Each of them was followed by questions measuring constructs of perceived value and buying intention. In the first paragraph respondents were asked to imagine themselves choosing a yogurt when shopping in a supermarket. Yogurt was chosen as it reflects a category of experience: a low-involvement purchase decision product with which everyone is familiar despite gender, income and place of residence. Such product attributes as quality, attractiveness and, in the case of nine scenarios, price, were equal among yogurts in the shop’s fridge, and allowing for consideration solely issues related to corporate social responsibility. The second paragraph of each scenario differed according to experimental treatment in order to assure the level of the appropriate independent variable (IV). For instance, to manipulate the level of CSR in the ecological domain, the second paragraph informed a reader that he had recently found out that one of the producers had either better than others
(high level of CSR) or worse than others (low level of CSR) waste management system (“emits more/less gases of CO₂, uses more/less energy and produces more/less wastes than others in the industry”). In the societal domain, a high level of CSR was manipulated by stating that one of the producers allows pregnant women to work from home, extends maternity leave and employs hitherto jobless people. The low level of CSR was manipulated by stating that a particular producer conducts irresponsible labor policy with respect to employees (e.g. “does not allow women, after giving birth to get back to the workplace and forces employees to work over hours without financial or a day-off reward”).

(b) Measures

There were two measures of the theoretical constructs that constituted dependent variables. The perceived value (PV) was measured with three items adapted from Kukar-Kinney, Xia, and Monroe [2007] and Grewal, Monroe, and Krishnan [1998]: “If I bought this yogurt, I feel I would be getting my money’s worth”, “If I bought the ’Mlekuś’ yogurt, I think I would be getting good value for my money”, “Buying this yogurt would be a worthwhile purchase because it is reasonably priced”. The buying intention (BI) was measured with three items adapted from Kukar-Kinney et al. [2007]: “I am willing to buy this yogurt”, “The probability of my buying brand X’s product is high”, “I would probably buy this yogurt”. All items were rated on the 7-point Likert scale anchored by Strongly Disagree/Strongly Agree. The survey questions were translated from English into Polish and back-translated into English to assure equivalence [Brislin, 1970]. The comparison showed conformity between the languages.

(c) Data collection procedure

Graduate students from two universities in Warsaw and one in Kielce were asked to participate in the study and fill in the questionnaires during a four-week period between May 8 and June 5, 2012. In order to increase the response rate, respondents were informed that they would take part in a lottery drawing for an award (mp3 player), if they answered all the questions. The sample was, therefore, convenient. With regard to consumer research, it is often debated whether the use of student samples limits external validity. Calder, Phillips, and Tybout [1981] argue that such a critique originates from an incorrect distinction between the research goals. According to them, there are two types of goals in consumer research: effects application and theory application. In the case of the former (which relies on the principle of induction), the effects of the study are generalized directly to a real-world situation, hence the correspondence procedures are applied (i.e. the research sample distribution is expected to reflect the real-world population distribution). In contrast, theory application’s goal (which rests on the logical principle) is to test or disprove the theory and no representative sample is required, hence it follows the falsification procedures. They also argue that homogenous samples
are preferred (e.g. students) “because they typically provide a stronger test of theory” [p. 200]. Since this study’s goal was to test the consumer ethics theory, the theory application logic was adopted.

Results

To test the hypotheses, one-way multivariate analyses of variance (MANOVAs) were used. This method seeks to explore the differences between two or more metric dependent variables simultaneously [Hair, Black, Babin, and Anderson, 2009]. All statistical analyses were performed using the SPSS software version 19.0 with a significance alpha of 0.05.

(a) Sample

A total of 458 questionnaires were distributed and 438 were returned, which constitutes a response rate of 95.63%. Of the 438 questionnaires, 17 were incomplete and 421 were subject to the analyses. The size of each group assigned to each scenario varied from 31 to 43, which is in line with the suggestions of Hair, Black, Babin, and Anderson [2009] about setting a minimum of 30 subjects per research group. The sample was 45.1% male, and the average age was 22.29% of the group originated from one university in Warsaw and 34% from a second university in the same city, while 35% were from a university in Kielce. The distribution of the subjects’ place of residence was as follows: less than 100,000 inhabitants – 48.7%; 100,000-400,000 inhabitants – 35.3%; more than 400,000 inhabitants – 16%. Distribution of the perceived (relative) financial situation was as follows: 20% of respondents declared their financial situation as worse than others; 55% said the same as others; 19% said slightly better than others; and 3% said they felt they are in much better financial shape than others in their environment. 21% of the subjects said they were employed on a full- or part-time basis. Unlike in the cases of place of residence, employment and financial situation (Sig.<0.05), there were no significant differences between gender and university of origin (Sig.>0.05 for both categories).

(b) Internal consistency

Reliability of the multi-item scales of perceived value and buying intention constructs was assessed by the Cronbach alpha coefficients [Cronbach, 1951] for each of the 20 scenarios (in total 40 coefficients). The values of internal consistency for perceived value ranged from 0.666 to 0.925 (with only one score below 0.700), while for buying intention value ranged from 0.600 to 0.926 (with only one score below 0.700). Alpha coefficients of both variables, therefore, meet the criterion of adequate and high level of internal consistency (Nunnally, 1978). It was thus possible to combine the items of each construct to set the measures by using a mean score.
(c) Hypotheses tests

Hypothesis 1a posited that consumers provided with information that a company has a high level of CSR, related either to society or to the natural environment, express greater perceived value (PV) and buying intention (BI) than when they are informed the company has a low level of CSR. To test this, two experimental groups were compared in each domain using two one-way MANOVAs. In the case of ecological domain, the Levene test for both dependent variables was violated (Sig.<0.05). Hair et al. [2009] recommends using a transformation procedure as a remedy for the problem of heteroscedasticity. Tabachnick and Fidell [2007] suggest reflection and square root transformation when data distribution is characterized by moderate negative skewness as in this case (for BI and PV this measure of asymmetry, when the CSR level was high, was respectively -0.453 and -0.106). The new variables were calculated according to the expression: $X_{NEW} = \sqrt{C - X_{OLD}}$, where C equals the largest score (i.e. 7) increased by a constant 1. The transformed dependent variables were normally distributed for low and high CSR level and for the control group, as assessed by the Shapiro-Wilk test (Sig.>0.05). The Box test for homogeneity of covariances was satisfied (M=11.548, Sig.=0.082). The Levene test revealed homoscedascity of variances for BI (F=2.154, Sig.=0.122) and PV (F=5.503, Sig.=0.055). There was a statistically significant difference between the means of the dependent variables (F=10.445, Sig.=0.000, Wilk’s $\lambda$ = 0.677). Tests of between-subjects effects showed a statistically significant effect of CSR level on both BI (F=20.236, Sig.=0.000) and PV (F=18.961, Sig.=0.000). Tukey’s HSD post-hoc test showed that mean scores of PV and BI were statistically significantly different between the low and high level of CSR (Sig.=0.000).

For the societal domain there was a statistically significant difference between the dependent variables (F=7.292, Sig.=0.000, Wilk’s $\lambda$ = 0.754). Tests of between-subjects effects showed statistically significant effect of CSR level on both BI (F=15.175, Sig.=0.000) and PV (F=4.617, Sig.=0.012). Tukey’s HSD post-hoc test showed that mean scores of PV and BI were statistically significantly different between the low and high level of CSR (Sig.=0.000). Hypothesis 1a is, therefore, supported.

Hypothesis 1b suggested that consumers are more sensitive to information about a low level of CSR than about a high level of CSR. In the ecological domain, Tukey’s HSD post-hoc test showed a statistically significant difference for a low CSR level and the control group (Sig.=0.000) but not between a high level of CSR and the control group (Sig.=0.449 for PV and Sig.=0.948 for BI). Similarly, in the case of societal domain, the test showed a significant difference between a low level of CSR and the control group (Sig.=0.000 for BI and Sig.=0.002 for PV) but not between a high level of CSR and the control group (Sig.=0.934 for PV and Sig.=0.947 for BI). The information about a high level of CSR did not significantly increase the perceived value and buying intention as compared to the control group in either domain. The results support Hypothesis 1 (see Table 1).
Hypothesis 2 suggested that a CSR initiative related to a firm’s core business has greater effect on perceived value and buying intention than a CSR initiative which is not related to a firm’s core business, given the same quality of product and price. To test this, one MANOVA was conducted with the independent variable set as a type of CSR initiative having two levels: related and non-related to a firm’s business activity (see Table 2). BI and PV scores were normally distributed for both types of CSR initiative, as assessed by the Shapiro-Wilk test (Sig. > 0.05 for each). The assumption of homogeneity of covariances was satisfied, as assessed by the Box Test (M=7.220, P=0.072). The Levene test for homogeneity of variances of both dependent variables was also satisfied with Sig. > 0.05. The results of MANOVA revealed that there was a statistically significant difference between consumers’ reactions (F=52.387, Sig.=0.000, Wilk’s λ = 0.414) as induced by the type of CSR initiative. Tests of between-subjects effects showed that the type of CSR initiative had a statistically significant effect on BI (F=92.168, Sig.=0.000) and PV (F= 62.029, Sig.=0.000). Hypotheses 2 is, therefore, supported.

TABLE 1. **Mean values – Hypothesis 1**

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Perceived value</th>
<th>Buying intention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variable</strong></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>CSR level</td>
<td> </td>
<td> </td>
</tr>
<tr>
<td>High</td>
<td>32</td>
<td>5.495</td>
</tr>
<tr>
<td>Low</td>
<td>33</td>
<td>3.685</td>
</tr>
<tr>
<td>Control group</td>
<td>31</td>
<td>5.194</td>
</tr>
<tr>
<td><strong>Ecological domain</strong></td>
<td> </td>
<td> </td>
</tr>
<tr>
<td>High</td>
<td>35</td>
<td>5.297</td>
</tr>
<tr>
<td>Low</td>
<td>32</td>
<td>4.469</td>
</tr>
<tr>
<td>Control group</td>
<td>31</td>
<td>5.194</td>
</tr>
<tr>
<td><strong>Societal domain</strong></td>
<td> </td>
<td> </td>
</tr>
<tr>
<td>High</td>
<td>35</td>
<td>5.297</td>
</tr>
<tr>
<td>Low</td>
<td>32</td>
<td>4.469</td>
</tr>
<tr>
<td>Control group</td>
<td>31</td>
<td>5.194</td>
</tr>
</tbody>
</table>

Source: Own calculation.

TABLE 2. **Mean values – Hypothesis 2**

<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Perceived value</th>
<th>Buying intention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent variable</strong></td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Type of CSR initiative</td>
<td> </td>
<td> </td>
</tr>
<tr>
<td>CSR level-high</td>
<td> </td>
<td> </td>
</tr>
<tr>
<td>Related</td>
<td>39</td>
<td>5.248</td>
</tr>
<tr>
<td>Non-related</td>
<td>38</td>
<td>3.282</td>
</tr>
</tbody>
</table>

Source: Own calculation.
According to Hypothesis 3, a higher price by a company with a high CSR level, set respectively at 100%, 150% and 200%, does not significantly decrease perceived value or buying intention. In other words, the hypothesis stated that consumers intend to spend even twice as much for a product from a responsible company than for an alternative product in the market (with no delivered information about CSR) and still perceive higher value. Thus it was expected that there would not be statistically significant differences. One-way MANOVA was conducted for three treatment groups and one control group with the independent variable set as the price level (0%, 100%, 150%, 200%) (see Table 3). The standard price, meaning no price premium, was set at the level of PLN 1.49. BI and PV scores were normally distributed for four price levels, as assessed by the Shapiro-Wilk test (Sig. > 0.05). The assumption of homogeneity of covariances was satisfied, as assessed by the Box Test (P>0.05). The Levene test for homogeneity of variances of both dependent variables was satisfied with Sig. > 0.05 for each. The results of MANOVA revealed that there was a statistically significant difference between consumers’ reactions (F=3.739, Sig.=0.001, Wilk’s λ = 0.838). The analysis of the tests of between-subjects showed that the significant difference relates to BI (F=5.515, Sig.=0.001) but not to PV (F=0.839, Sig.=0.475). The mean scores were statistically significantly different for three pairs: between the control group and all treatment groups with prices respectively higher by 100%, 150% and 200% (Sig.<0.05) but not between treatment groups (Sig.>0.05), as assessed by the Tukey HSD post-hoc tests. Hypothesis 3, therefore, is not supported.

**TABLE 3. Mean values – Hypothesis 3**

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>n</th>
<th>Perceived value</th>
<th>Buying intention</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Price level</strong></td>
<td></td>
<td>Mean</td>
<td>Mean</td>
</tr>
<tr>
<td>Control (0% higher)</td>
<td>31</td>
<td>5.194</td>
<td>5.441</td>
</tr>
<tr>
<td>100% higher</td>
<td>33</td>
<td>4.848</td>
<td>4.636</td>
</tr>
<tr>
<td>150% higher</td>
<td>31</td>
<td>4.968</td>
<td>4.215</td>
</tr>
<tr>
<td>200% higher</td>
<td>31</td>
<td>4.839</td>
<td>4.570</td>
</tr>
</tbody>
</table>

Source: Own calculation.

Hypothesis 4 predicted that functional product attributes are more important to consumers than the level of corporate responsibility. In other words, there is a trade-off between functional and CSR product attributes. This would mean that consumers do not perceive higher value and are not more willing to buy a product that is characterized by a high CSR attribute but simultaneously is worse in functional terms, than an
alternative product with a low level of CSR but better in terms of functionality. To test this, one MANOVA was conducted with two groups. The scenario for the first group described a product as high on the CSR continuum and low on the functional continuum (i.e., “less durable than previously and soiled container”). The scenario for the second group described the product as low on CSR and high on functional continuum (“more durable container”) – see Table 4. BI and PV scores were normally distributed for each combination of CSR level and functional level, as assessed by the Shapiro-Wilk test (Sig. > 0.05). The assumption of homogeneity of covariances was satisfied, as assessed by the Box Test (P>0.05). There was a homogeneity of variance between groups as assessed by the Levene test for equality of error variances – for BI Sig.=0.129, for PV Sig.=0.110. The multivariate test revealed that there was a statistically significant difference between consumers’ reactions (F=8.423, Sig.=0.000, Wilk’s λ = 0.831). The results of the between-subjects effects test showed significant differences between BI (F=4.841, Sig.=0.031) and between PV (F=17.045, Sig.=0.000) for both levels of independent variable. Hypothesis 4 is, therefore, supported.

<table>
<thead>
<tr>
<th>TABLE 4. Mean values – Hypothesis 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent variables</strong></td>
</tr>
<tr>
<td>Perceived value</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td><strong>Independent variable</strong></td>
</tr>
<tr>
<td>CSR level</td>
</tr>
<tr>
<td>High + low functionality</td>
</tr>
<tr>
<td>Low + high functionality</td>
</tr>
</tbody>
</table>

Source: Own calculation.

(d) Discussion

As a result of rapidly growing competition, many firms seek various opportunities to differentiate their offer on the market. One of these distinguishing strategies focuses on enhancing reputation through engagement in pro-environmental or pro-social programs (corporate social responsibility initiatives). The main concern is how to perform them [Bhattacharya and Sen, 2004; Smith, 2003].

While many studies attempted to investigate different aspects of consumer behavior with respect to CSR and identify the forms of CSR initiatives which are positively evaluated by consumers, relatively few of them have explored these issues outside the United States and through the lens of value received simultaneously [an exception is a study by Ferreira et al., 2010]. This study tended to fill the gap by investigating in what direction and to what extent corporate social responsibility initiatives affect Polish consumers’ reactions using the constructs of perceived value and buying intention. It showed that
previous knowledge about consumer behavior with respect to CSR does not hold true in some aspects and that various issues are involved in the process of emotional value creation through the cause-related marketing strategy.

The results suggest that respondents perceive significantly higher value of yogurt and are more willing to buy it when they knew that the company which produced it behaved responsibly than when they were informed that company was irresponsible. It was also found that respondents were significantly more affected by information about negative than positive corporate behavior as compared with the control group. These results support findings of prior experimental studies [Creyer and Ross, 1996; Mohr and Webb, 2005; Sen and Bhattacharya, 2001]. Mohr and Webb [2005] posited that the stronger effect of “negativity bias” is due to the fact that respondents may assume that no CSR information means lack of responsibility problems (i.e. positive CSR), or they simply do not think of it. Stronger sensitivity to negative CSR information may mean that avoiding questionable corporate behavior may be a more effective cause-related marketing strategy than engaging in CSR initiatives. Several researchers [e.g., Auger et al., 2003] indicate that in fact, a low level of CSR may cause consumer punishment involving a boycott that may affect the company’s decisions or revenues. The example of the boycott of Nike due to bad treatment of the workforce in its Asian factories [Kytle and Ruggie, 2005] or of BRE Bank in Poland due to unfair determination of mortgage rates [Roszkowska-Sliz, 2011] may confirm this phenomenon. However, as stated by Klein and Dawar [2004] and Ettenson, Smith, Klein, and Andrew [2006], a boycott’s effects on sales are overestimated.

The effect of the type of CSR action (related vs. non-related) was found to be statistically significant. Respondents supported to a higher degree a CSR action that was related to a firm’s core business as compared with an initiative that was not related. Even more interesting, the non-related type of CSR engagement had little effect on perceived value and buying intention (value below 3.5). This is consistent with what was found by Du et al. [2007], and may suggest that “selling” CSR may bring negative consequences for companies in terms of sales volume. Consumers simply may not trust a firm that does anything in order to increase profits. This may explain why not all CSR actions are efficient in economic terms.

The price increase effect was found to be significant. Higher prices significantly decreased respondents’ buying intention but they still believed the premium charge was justified (perceived value did not decline notably), even when a yogurt was three times more expensive than an alternative one with no CSR feature. The results are thus inconsistent with findings of prior research of consumers in the United States, Australia and Hong Kong [Auger et al., 2003; Elliott and Freeman, 2001; Ha-Brookshire and Norum, 2011] and surveys of Polish consumers [Koszewska, 2011; Mizera, 2011 cited in Antczak, 2011; Panel CSR, 2011]. Perhaps, in the Polish context, in order to be acceptable, the price rise should amount to less than $0.50 (which constitutes 100%) for a responsibly produced low-involvement product.
In line with previous research and as expected, respondents, when forced to select between a functional and non-functional (CSR) feature, chose the former. In other words, they saw higher value in a yogurt which tastes good, whose container is solid and which was produced by a company with a poor CSR record and were willing to buy it to a greater extent than one which was produced responsibly but had an easily destructible container and did not taste good. The above findings confirm some prior observations [e.g., Bhattacharya and Sen, 2004; Boulstridge and Carrigan, 2000] but do not support the conclusions of Auger *et al.* [2003], who found that ethical and functional features had approximately equal effect on willingness to pay in the case of a low-involvement product (soap). However, when they investigated the impact on a durable good (athletic shoes), functional features were revealed to play a more important role than ethical features in consumer decision making.

**Managerial implications**

The evidence from this study has important practical implications for business practice and marketing managers by providing insight into the perception of different types of CSR initiatives. Companies investing in CSR are likely to be interested in which initiatives are more valued than others. Decisions about implementing a specific CSR initiative should be made with caution since engaging in any type of CSR does not always enhance perception of a company. The experimental results demonstrate that the previously unconsidered issue of whether CSR initiative is related to a firm’s basic activity makes a difference to consumers. Specifically, findings indicate the importance of designing such an initiative that relates directly to a company’s core business as opposed to an initiative that does not. In this context, the role of valid information about CSR needs to be emphasized. In this study, respondents were informed about corporate behavior, while in practice, this process is made by the companies and the media, and may be supported by governmental or non-governmental organizations. This constitutes a challenge for marketers. Firms seeking to enhance the positive effect of their engagement in CSR should choose the appropriate communication strategy and consider the possibility of cooperation with external agents.

The study also found that Polish consumers’ reactions differ from reactions of consumers in the United States in the sense that they are not willing to pay more than twice as much for a fast-moving consumer product (yogurt). This may suggest that a decision to raise the price of the “responsible” consumer good should be made carefully, as imposing too much of an increase may discourage the purchaser. It seems that consumers’ trade-off between corporate responsibility and price may constitute an opportunity as well as a disadvantage for firms. In a case where price effect dominates responsibility effect, a company may differentiate itself or its product as eco-friendly (responsible) and
still use a price-related marketing strategy by focusing on diminishing costs of business processes such as manufacturing, transportation or distribution [Carrete, Castaño, Felix, Centeno, and Gonzalez, 2012].

This research also shows that providing a non-traditional attribute of a product cannot be offered instead of traditional features like quality, taste, excellent customer service, design, etc. This may suggest that cause-related marketing focused on delivering emotional value instead of functional value is less effective in economic terms than the one which provides solely functional value.

**Limitations and future research**

Several limitations of this study need to be acknowledged. First, as was mentioned earlier, one of the goals of this research was to test the theory and not to generalize the results; therefore, the sample may be considered a deficiency. Student respondents may distort findings as they are more price sensitive. In order to extrapolate the results to the population, further research should, therefore, be conducted on a representative sample.

Consequently, the findings pertain to the fast-moving consumer goods sector and, therefore, may not hold true in the durable goods sector. Second, the predictive power of individual behavior based on this study is relatively low and its findings may be treated as consumer attitudes. To better understand consumer behavior with respect to CSR, it is suggested that future studies include theoretical constructs of normative beliefs (subjective norm) and control beliefs (perceived behavioral control) according to assumptions of the theory of planned behavior [Ajzen, 1985, 1991]. Third, information was delivered in the form of scenarios and respondents had to imagine themselves taking part in the hypothetical situation. The researcher believes that conducting a laboratory or field experiment would provide more accurate results. It should also be noted that subjects answered questions in quick succession after they had been informed about companies’ CSR levels. In reality this process is extended over time.

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The effects of corporate social responsibility initiatives and price premiums on Polish…


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Abstract

Since their establishment in 1999, the Open Pension Funds (OPFs) have comprised a mandatory capital pillar in the pension system of Poland. The paper’s objective is to analyze the principles under which the OPFs function and assess their past and anticipated future impact on the state of the country’s public finances, particularly on the public debt. The analysis also considers the past and potential effects of the OPFs existence from the point of view of future levels of old-age pension. The studies are targeted at determining the threats connected with further maintenance of the OPFs from the point of view of both public finance stability and pension system security.

Keywords: pension system, mandatory second pillar, open pension funds, pension reform

Introduction

The mandatory capital pillar, established in 1999 in the Polish pension system, has triggered a significant worsening of the situation with Poland’s public finances. Since 1999, half of the growth in Polish public indebtedness is due to the Open Pension Funds (OPFs), while in the entire public debt of Poland, the debt due to introduction of the capital pillar constitutes over one-third. Following annual increases from 2013 to 2017 in pension contributions transferred to OPFs, this debt will grow at a fast pace, causing an increasingly higher threat of insolvency. From the point of view of a future pensioner, basing a significant part of a pension benefit on the effects of contributions invested in the financial market is seriously detrimental. The risk related to this market means the possibility of significant losses of assets gathered in pension funds. Moreover, the fees and commissions charged over the decades by private institutions managing OPFs will
cause a significant reduction in the resources intended for future pensions. Because of the huge damage to public finances and threats to future pensions, the mandatory capital pillar should be totally liquidated.

**The reform of pension systems in the world**

Pension systems in the world have been undergoing constant changes, although in the highly developed countries these changes have been relatively small over the last several years. They did not undermine the principles under which these systems were shaped during the post-war period. The situation was different in the case of some countries usually counted in the group of developing countries, including those of the Central and Eastern Europe region. The significant impact on the direction of reforms undertaken in these countries since the mid-’90s was presented in 1994 by the World Bank in the report *Averting the Old Age Crisis* [World Bank, 1994]. In this report, the Bank recommended construction of a pension system based on three pillars. The first, which was mandatory and was financed from the state budget from pension contributions and taxes deducted from the currently employed, was to ensure at least a minimal benefit for retirees. The second pillar, defined as the capital pillar, was to be created from a portion of contributions previously transferred to the first pillar. The Bank also postulated this capital pillar as mandatory, while a source of pensions paid from it would be financial assets managed by private institutions. Complementary to those two pillars was to be the third pillar, within the scope of which certain persons could voluntarily invest capital in the financial market.

The conception presented by the World Bank was based on increasingly obvious negative demographic tendencies that could cause incapacity of the traditional repartition pillar in the future. The multi-pillar character of the system proposed by the Bank was to be a way to reduce the risk for public finances caused by the ageing process in society. This led to the slogan propagated by this institution: security through diversity. Exposing demographic concerns was the factor that was to mobilize at least some countries to abandon the traditional, solidarity-based pillar on behalf of market solutions in creation of old-age pensions.

These arguments provided the World Bank with grounds to question the traditional pillar of the pension system, and to recognize economic liberalism as the base for development of this system through connecting pension benefits with functioning of the financial markets. Thus, the essential concept of social insurance - a method of reducing the risk to personal income of the elderly in view of their age and declining working capabilities - was undermined. The World Bank had created a specific ideology that advocated “propelling privatization” of a part of the pension system.

The experiences with pension reform in Chile, inspired by neo-liberal principles and implemented in 1981 under authoritarian rules [Antia, Lanzara, 2011], were of great sig-
significance for the promotion of the World Bank’s vision of the pension system. As a result, financial institutions were provided with extraordinary sources of profits for decades as enormous flows of financial resources were diverted to them due to the state obligation. Thus, huge groups of society were taxed on behalf of a few private companies. It encouraged financial institutions, particularly those operating on the international scale, to promote this solution and make efforts, with the support of international financial organizations, to introduce it in other countries.

The structure of pension systems in the world

In 2005, within the framework of the World Bank, a slightly modified classification of the pension system components [Holzmann, Hinz, 2005] was proposed including five pillars: 1) pillar “zero”, assurance of a social old-age pension, not related to duration of insurance, 2) mandatory pillar One, of repartition character, 3) mandatory pillar Two, of capital character, 4) voluntary pillar Three, various forms of private savings, 5) voluntary pillar Four, including formal social welfare programs (in the area of health care and housing), non-financial assets (including properties), and the so-called reverse mortgage. In practice, in most countries the last two pillars are not regarded as parts of pension systems because of their optional character.

Pillar zero, most often assuming the form of a minimal state old-age pension, is sometimes regarded as the social welfare system. Its objective is providing minimum subsistence in old age, as well as preventing poverty and social exclusion. In practice, it may concern only the poorest elderly people, or it may have a general character. Then, all people who meet the obligatory criteria regarding age and length of citizenship are entitled to some minimal old-age pension.

The mandatory first pillar (pay-as-you-go – PAYG) of the pension system has a repartition character, which means that pension benefits are paid from the contributions transferred to the system by the currently employed (any deficit is covered from the budget). The right to this benefit is usually connected with minimal insurance duration and payment of contributions into the system during that period. Pillar One may be either a system with a defined benefit (DB) or with a defined contribution (DC). In the first case, the level of an old-age pension most often depends on the amount of received remuneration and work seniority. The level is usually measured by the so-called replacement rate, i.e. the relation of an old-age pension to the last remuneration, or the ratio of the average pension to average earnings in the economy (benefit ratio). In the second case, it is only known what contributions should be paid to the system, and the level of an old-age pension is not determined. At its best, in this system the state may only guarantee some minimal old-age pension or apply some other mechanism providing aid to the poorest. However, this mechanism is closer to the social welfare system than to the pension system.
The mandatory second pillar of the pension system means that a portion of pension contributions deducted from the earnings of the currently employed, instead of going to pillar One, is transferred to pension funds to be invested in the financial market. Private financial institutions are usually entrusted with the management of these pension funds. The second pillar almost entirely comprises the defined contribution system; therefore, it contains no guarantees – neither public nor private – concerning the level of future old-age pensions that would come from this pillar.

### TABLE 1. Structure of pension systems by regions of the world in 2011

<table>
<thead>
<tr>
<th>Region</th>
<th>The number of countries</th>
<th>Pillars pension system</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pillar Zero</td>
</tr>
<tr>
<td>East Asia and Pacific</td>
<td>28</td>
<td>11</td>
</tr>
<tr>
<td>East Europe and Central Asia</td>
<td>30</td>
<td>17</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>37</td>
<td>19</td>
</tr>
<tr>
<td>Middle East and North Africa</td>
<td>20</td>
<td>2</td>
</tr>
<tr>
<td>South Asia</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>46</td>
<td>8</td>
</tr>
<tr>
<td>High-income OECD countries</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>World</td>
<td>193</td>
<td>81</td>
</tr>
</tbody>
</table>


Of the analyzed 193 countries (Table 1), 81 have some form of pillar zero, but the most common solution is the mandatory pillar One, which in 2011 was reported as operating in 151 countries. Particularly noteworthy is the fact that almost all high-income OECD countries, including all EU-15 countries with the exception of Sweden and Italy, are still applying the defined benefit principle in this pillar [OECD, 2011, p. 107]. It means that these countries respect the principle of ensuring a particular level of income for pensioners, in accordance with the countries’ obligatory social standards. Among the Central and Eastern European countries that accessed the European Union in 2004 and 2007, the defined contribution principle was applied in Poland and Latvia [European Commission, 2012, p. 87].

Significantly, mandatory pillar Two of the pension system has been introduced in only 32 countries, including 14 in Eastern Europe and Central Asia, and 10 in Latin America and the Caribbean. It should be noted that mandatory pillar Two was established in only three OECD countries, all classified as high-income countries. Therefore, pillar Two has generally been established in the low-income countries within the group
of developing countries. This means that highly developed countries have not adopted the obligation of transferring pension contributions to the management of private institutions. The three OECD countries that have adopted mandatory pillar Two – Australia, Norway and Sweden – are among the wealthiest countries in the world and they have had huge budgetary surpluses for a long time (although the budgetary situation in Sweden has deteriorated slightly in recent years, partly because of the necessity to maintain pillar Two). The situation of these countries contrasts with that of the other developed countries, the majority of which have had budgetary deficits for decades and increasing public debt. Transition of a part of pension contributions to pillar Two, resulting in a loss of public means for the payment of current pensions within the scope of pillar One, would cause a growth of additional debt. Moreover, there is no social acceptance in these countries for the idea of building pensions via the financial market because of the current high-risk situation.

Kotlikoff [1999], characterizing the World Bank approach toward reforming the pension system, described the “irrational” character of the mandatory capital pillar. He pointed out that in practice, pension contributions directed to this pillar are mostly invested in government bonds. In the new system, contributions are transferred to pension funds, to the state budget, and then the pension funds retransfer these contributions to the government in the form of loans. In 1999, warnings concerning the irrationality of the mandatory second pillar were presented by Miles [1999] indicating that the costs of the capital pillar are very high. The cost is a burden on both current and future generations in the form of tax increases and reduction in public expenditures. Miles also underlined the fact that, as they are propagated by partisans of this pillar, potential profits from investing pension contributions are burdened with high risk.

Holzmann [2012], in his extensive analysis of world pension systems, indicated that from the very beginning of the existence of mandatory capital pillars in various countries, the high fees charged by financial institutions managing pension funds have been subjected to severe criticism. He pointed out these charges may significantly decrease future old-age pensions. If the charges amount to 100 base points or more (i.e. by 1% or more), it reduces the final pension benefit by 20% or more.

The reform implemented in the Latin American countries, including establishment of the mandatory pillar Two, proved to be difficult to maintain; the crisis that began in 2007 was instrumental in this case. In some of these countries, it produced an incentive to reverse these reforms because of a snowballing public debt and a drastic drop in the funds’ assets due to fees charged by financial institutions, as well as a drop in market prices of shares and other financial instruments. In 2008, Chile introduced serious changes in the pension system to reduce the negative effects of pension privatization within the framework of pillar Two. In Argentina, this pillar was entirely abandoned and the funds gathered within its scope were transferred to the public system [Mesa-Lago, 2012, p. 3].
A report published in 2010 by the Chilean National Research Center for Alternative Development Centrum – CENDA (Centro de Estudios Nacionales de Desarrollo Alternativo), presenting the results of pension reform in Chile in 1981–2009, indicates that financial institutions managing mandatory pension funds benefited more from this reform than the fund members [CENDA, 2010]. The practice showed that these funds are not able to ensure the previously promised pensions and that the obligation of providing 60% of the fund members with at least minimal old-age pensions burdened the state. Moreover, it turned out that the system of private pension funds, resulting in a huge burden on public finances, became the source of enormous profits for the institutions managing the funds and made possible the seizure of significant public means by selected private companies.

Experience proved that the mandatory capital pillar of the pension system managed by private financial institutions does not solve – or even mitigate – the problems resulting from the ageing of society; instead it creates numerous new threats. Nicholas Barr (London School of Economics) indicated in 2001 that the capital pillar is just as prone to demographic tendencies as the repartition system [Barr, 2001]. It should be added that the irrational character of this pillar, leading to quick acceleration of a public debt in the countries that introduced this pillar, as well as the risk it generates for future pensioners, initiated a gradual process of abandoning this element of the pension system not only in Latin America, but also on other continents. Some countries have managed to fully liquidate this pillar, while others are successively reducing the transfer of pension contributions.

### Union regulations concerning the pillar pension system

The regulations adopted at the level of the European Union in respect to social insurance stipulate coordination of actions initiated by the member states within this area. Therefore, harmonization of the insurance systems is not anticipated. Each member state has freedom in shaping them, including the amount of benefits paid within their scope, persons entitled to these benefits and the level of contributions. Regulations No. 883/2004 and 987/2009 define mutual requirements that should be met by governments of the member states when executing domestic law. National legislation should ensure equal treatment and non-discrimination of persons exercising the right to free movement within the European Union. In respect to pensions, the above-mentioned so-called coordination regulations define the following principles of shaping the pension system, significant from the point of view of the uniform market:

- duration of insurance periods in accordance with regulations in one country are taken into account in assessing benefit entitlements,
- pension entitlement is not dependent on residency in the country guaranteeing an old-age pension,
each member state in which a person was insured for at least a year is obliged to pay an old-age pension,

there are no transfers of pension entitlements to the pension system of another member state.

As regards directives directly or indirectly connected with particular pillars of the pension systems, the following should be mentioned:

1. Directive 2003/41/EC of June 3, 2003 on the activities and supervision of institutions for occupational retirement provision (IORP Directive). The Directive enables institutions to exercise freedom of capital flow obligatory in the internal Community market as well as the freedom to provide services, and also management of company pension funds in the enterprises located in other member states.

2. Directive 2008/94/EC of October 22, 2008 on the protection of employees in the event of the insolvency of their employer (Insolvency Directive), obligating the member states to pass necessary regulations laying down the rules and scope of such protection. This is also in respect to the employees’ rights respective to company pension systems.

3. Directive 98/49/EC of June 29, 1998 on safeguarding the supplementary pension rights of employed and self-employed persons moving within the Community, obliging member states to treat such persons no worse than persons moving within the country’s territory.

4. Directives concerning life insurance, enabling insurance activity and freedom of insurance services within the entire Community. In 1979, the so-called First Life Directive was adopted on life insurance. In 2002 and 2009 the regulations were seriously amended and developed in order to provide additional protection to the insured.


6. Directive 2004/39/EC of April 21, 2004 on markets in financial instruments (MFID), which objective is to protect investors, increase competition, and promote competition in the sector of financial services.

The Directive 2004/39/EC concerns a wide range of investment services and financial operations, including trade in monetary market instruments, securities, units of investments funds, and derivative instruments. The Directive introduced the obligation on financial institutions, including banks and broker’s offices, to inspect the clients’ knowledge regarding investment products and risk related to the investment in these products before concluding the contract for providing investment services. The regulation is intended to ensure that customers learn about the risk and consciously choose both the products as well as connected with them financial services.
It should be pointed out that inherent in the mandatory capital pillar dependency of part of the future pension on investment in the financial market contradicts the philosophy of investing in this market implied by the MFID directive. Investing in the financial market is connected with high risk, which may eventually result in a drastic pension reduction. According to this Directive, such risk may be only taken voluntarily and advisedly. It is a particularly significant question from the point of view of a future retiree, as a pension benefit objective is providing minimum subsistence after termination of economic activity. Therefore, from the societal point of view, it is unacceptable to expose these resources to the risk connected with financial market. This aspect is strongly accentuated by Riesco in his assessment of the mandatory private pension funds functioning in Chile since 1981. He points out that these funds should be completely liquidated, as the dependency of pensions of over 90% of Chilean pensioners on a roulette game is inadmissible, considering investment in financial instruments as such a game. The practice of the almost 30-year period of the Chilean OPFs showed that the majority of these fund members did not manage to obtain any pension. In order to provide minimum subsistence means after transition into retirement, the state pledged to pay benefits from the budget [Riesco, 2010].

The structure of pension systems in the EU countries

The most important element of the pension systems in all European Union countries is the repartition pillar, within the framework of which the pension amount depends on remuneration and duration of employment. In nine EU member states, besides this mandatory pillar, a second mandatory pillar of capital character was also established in which private financial institutions were entrusted with management of the funds derived from pension contributions. Pillar Two was established in eight countries of Eastern and Central Europe, but only in Sweden among the countries of the “old” EU. However, considering the numerous differences (which are mentioned below), the mandatory capital pillar in Sweden is a specific solution and is different from those functioning in the countries of Eastern and Central Europe.

In some member states there are also employee (company) pension funds, functioning either according to the principle of setting up holdings entered in the balance of the employer company, or transferring money into management of professional pension funds or insurance institutions. Participation of employees in company pension funds is usually voluntary, whereas in the countries that initially assumed obligatory participation, in most cases an option of leaving the fund (opt-out) has been introduced. In each country it is also possible to gather savings within the scope of various personal pension plans operated mainly by insurance companies.

The Community Social Security Committee in its report of 2008 on pension funds managed by private institutions stated that real return rates from investment contribu-
tions in the financial market have a strong impact on future old-age pension. Pursuing higher profitability unavoidably causes higher risk [European Commission, 2008, p. 23]. Thought-provoking is a Committee statement indicating that because of that risk, the real level of an old-age pension from the capital pillar may turn out to be so low that the state will have to shoulder the burden of providing a pension benefit that ensures the socially accepted minimal level.

A January 2010 analysis by the Special Committee on the Financial, Economic and Social Crisis, European Parliament claimed that both financial crises and demographic changes have a serious impact on the pension systems in the EU member states. The crisis has a short- and medium-term impact, whereas the impact of demographic changes is mostly a long-term one, lasting for decades. It should be noted that the current crisis is one of many that were observed during the last 20 years; history is full of financial crises that cause speculation bubbles in the market of financial assets. Unlike the repartition system, in the capital pillar pension system current generations pay pension contributions that are transferred into the financial market and stay there until these generations withdraw the gathered capital after transition into retirement and use it for financing their consumption. Therefore, the means gathered in this pillar are directly submitted to the influence of financial crisis; it depreciates the funds gathered in the period before the crisis, while the scope of losses depends on the structure of investment holdings. The Committee pointed out the fact that as a result of the 2008–2009 crisis the stock value in the Community member states dropped by almost 50%. Lower value losses occurred with company bonds, whereas the losses in particular countries depended on the sector in which the issuer company operated. The lowest risk concerned government bonds, although in some countries they were also very high (e.g. Greek bonds). Assessing the overall effects of the financial crisis on pension funds (voluntary and mandatory) the Committee stated that in the European Union during the period 2008–2009, the crisis reduced the value of the assets accumulated by the funds by 15.8 % [European Parliament, 2010, p. 2].

The public debt crisis in the euro zone since 2010 has been seriously destabilizing the situation in financial markets, including stock markets. There is no reason to expect any significant improvement in this situation in any predictable time perspective. Therefore, old-age pensions based on the instruments of the financial market will be still threatened with the huge risk of devaluation.

**Mandatory capital pillar of the pension system in some EU countries**

The obligation to gather means towards an old-age pension in the second capital pillar has been established in nine Community member states: in Sweden and in eight countries of Eastern and Central Europe (Bulgaria, Estonia, Lithuania, Latvia, Poland,
Romania, Slovakia, and Hungary). In respect to other EU countries, the principle has been maintained that participation in all elements of the pension system, besides the repartition system, is voluntary, with the exception of employees’ pension funds in Denmark [European Commission, 2010]. According to the European Commission report published in May 2012, the mandatory capital pillar of the pension system functions in six of the 27 member states, i.e. in Bulgaria, Estonia, Lithuania, Poland, Romania, and Sweden [European Commission, 2012, p. 90]. It means that the obligation to participate in this pillar has been already abandoned in three Community member states (Latvia, Slovakia, and Hungary). It should be also added that in most EU countries where the mandatory second pillar is still functioning, the percentage of the pension contributions transferred to this pillar has been significantly reduced.

**Sweden.** Sweden often serves as the example of a highly developed country where a mandatory pillar of the pension system in the form of open pension funds was established. The different character of this pillar in Sweden as compared to OPFs in Poland is, *inter alia*, indicated by Szumlicz [2010].

When assessing the Swedish solution, it should be pointed out that Sweden is a unique case in this group of countries, and its pension reform is distinguished from Poland’s reform in respect to the mandatory capital pillar in many ways.

First, Sweden based its mandatory system of pension funds on annual surpluses in the public finance sector constituting between 2% and 4% of GDP (following the last financial crisis, Sweden observed a worsening of the budgetary balance), whereas Poland has posted deficits in the state budget and the entire public finance sector for decades, which results in growing public debt. The Swedish system assumed that old-age pensions would be covered by the surpluses obtained by the state, while in Poland, it was assumed *de facto* that saving towards an old-age pension would be carried out through incurring the public debt.

Second, it was decided in Sweden that only a contribution comprising 2.5% of the monthly remuneration, i.e. a relatively small part of contributions amounting to 18.5% of the monthly remuneration, would be invested in the financial market, while 16% would be transferred to the repartition system, whereas in Poland it was as much as 37.4% of contributions (division of contribution comprising 19.52% of the monthly remuneration: 12.22% into the repartition pillar and 7.3% to OPFs).

Third, in Sweden participation in pension funds is obligatory for persons receiving annual income higher than 16,800 SEK a year, while in Poland no income threshold was established. Moreover, in Sweden financial institutions are not allowed to charge an initial fee from the contributions transferred to investment [European Commission, 2008], whereas in Poland there is a charge and it is high (see below).

Fourth, in Sweden, contributions transferred to the capital pillar may be managed by a few hundred various financial institutions, according to the fund members’ choice, while in Poland the number of institutions managing the OPFs’ assets is limited, and transferring to another fund may result in extra charges.
Considering the above differences, the mandatory pension funds in Sweden are a solution that should not be used as an argument supporting a mandatory capital pillar in Poland.

**New member states.** The majority of the countries that accessed the European Union in 2004 and 2007 introduced a mandatory capital pillar in the pension system. Among the new member states of the Central European region, only the Czech Republic and Slovenia have not introduced the pillar.

Like some Latin American countries, privatization of a part of the pension system in the newer EU countries resulted from a strong involvement of the World Bank and the USAID (U.S. Agency for International Development) organization, and also some international organizations (including the OECD). The base of this involvement, mechanisms of implementing the mandatory capital pillar and methods of influencing particular countries were presented in detail by Mitchell A. Orenstein (John Hopkins University) in 2008. He indicated that the main motive for enforcing the idea of this pillar establishment was the aspiration of international banks and other financial institutions to obtain new sources of income as a result of managing the huge pool of savings coming partially from obligatory pension contributions deducted from earnings [Orenstein, 2008, p. 79]. According to Orenstein, dependence on financial aid from both the World Bank and the International Monetary Fund plays a significant role in enforcing introduction of the mandatory capital pillar.

In the case of Argentina, one of the conditions for obtaining a 40 billion USD loan from the IMF was establishment of mandatory pension funds managed by private financial institutions. Orenstein thoroughly described the actions undertaken in Poland by the World Bank and USAID; he showed various methods of influencing decision makers in order to persuade them to establish such funds, interference from these institutions in designing legal acts, financing a campaign focused on shaping public opinion, and financing numerous study visits of politicians, journalists, and scientists in Chile, Argentina and other countries. The author also noted that the World Bank placed its functionaries in some Polish central offices and entrusted them with the mission of shaping and implementing the pension reform. Also noteworthy are his comments concerning involvement of the financial organization USAID in shaping the state body that was to supervise pension funds in Poland [Orenstein, 2008, p. 112–128].

The analysis by Orenstein suggests that Poland and other countries of the Eastern and Central Europe region, as well as countries in Latin America, were unable to resist the strong pressure of international organizations and financial institutions regarding introduction of the mandatory capital pillar. The practice showed that existence of this pillar generated such enormous public indebtedness that in some countries its complete liquidation was necessary, while others implemented a drastic reduction in the level of transferred contributions.
In Poland the mandatory capital pillar has been functioning since 1999 in the form of open pension funds (OPFs). Establishing this pillar was part of a reform targeted, according to the declaration of its authors, at adjustment of the pension system to challenges posed by demographic tendencies and the state of public finances. Therefore, the declared goal was to increase the security of future pensions when, because of the continually lower number of people of working age per each retired person, the possibilities of financing pension benefits from the budget would be significantly reduced. Therefore, it was assumed that a portion of pension contributions currently deducted from the employed, instead of financing current pensions in the repartition pillar, would be directed to management of private financial institutions in order to invest them in the financial market. These institutions, after charging their fees, should manage received resources by taking into account the limits set by the state regarding investments in particular groups of equities (shares, bonds and other financial instruments). The period of this management, i.e. administration of the money from pension contributions, basically constitutes the entire period of the employee’s economic activity until reaching retirement age – in practice 50 years or even more. After this period, the accumulated amount should be either transferred to the state institutions in order to pay an old-age pension due from this source, or to a special private institution, which would pay pension benefits while still actively managing the received resources and charging respective fees. In Poland, the role of such institutions was to be played by the so-called pension establishments, although hitherto no respective law was passed.

Solving the OPFs’ problem in Hungary. Hungary is a country that suffered particularly severely in the world financial and economic crisis. In 2008–2010, the country had serious problems with repayment of the public debt. Actual insolvency was only avoided due to substantial financial aid provided by the International Monetary Fund and the European Union. On the basis of an agreement concluded in October 2008, the country was granted a loan of 20 billion USD by the IMF and the EU. The Hungarian government had to take drastic steps in order to improve the state of public finances. Both drastic cuts in expenditures and tax increases turned out to be necessary.

The mandatory capital pillar, consisting of transferring a part of pension contributions to private financial institutions for management, was established in Hungary in 1998. In 2010, over 3 million people were members of open funds in Hungary. Growing problems with public finance in Hungary became the main element that facilitated actual liquidation of the mandatory pillar. The Hungarian Parliament passed a law regarding this issue on 13 December 2010. The solution consisted of retransferring as of 31 January 2011 the assets gathered in the funds to the budget, providing that a fund member had not declared the will to remain in a private fund until that date. When deciding to remain in a private pension fund, the fund members had to resign from the
entitlement to the state old-age pension. That move, meaning actual liquidation of the mandatory capital pillar, was mostly targeted at elimination of one of the main reasons for the budget deficit. The Hungarian government assumed that the reclaimed funds would go towards a reduction in the personal income tax, which would help create more than a million new jobs during the next decade and accelerate economic growth [Barley, 2010].

The assumptions concerning liquidation of open pension funds were implemented in practice. Only about 3.1% of these fund members (97,000 people) remained in them after 31 January 2011. About 96.9% moved into the state system [Hirose, 2011, p. 195]. Societies managing pension funds were obliged to prepare a plan for transferring the assets gathered in funds into the budget (about 3,000 billion HUF) by mid-April 2011. The assets that were transferred in 2011 from mandatory pension funds into public finances constituted 9.5% of the GDP. The assets were transferred to a special state fund (Pension Reform and Debt Reduction Fund), which became a significant factor enabling improvement of the public finances. After many years of large budgetary deficits, in 2011 Hungary for the first time observed a budgetary surplus comprising 4.3% of GDP [Government of the Republic of Hungary, 2012, p. 26].

The actions undertaken by Hungary in respect to pension funds were criticized by financial institutions in the country, including beneficiaries of the previous system. International financial markets projected doubts about whether due to this unfriendly step concerning financial institutions, Hungary would be able to obtain resources in financial markets in order to refinance debt in the foreign currency due for repayment in 2011. The evidence showed that eventually, the actions of the Hungarian government regarding pension funds did not have a negative impact on Hungary’s international credibility. This is due to the fact that the country almost entirely freed itself from a huge burden to public finances posed by the maintenance of the mandatory second pillar of the pension system generating fast growing public debt. Moreover, the maintenance of Hungarian financial credibility was facilitated by the fact that before making a decision regarding actual liquidation of open pension funds, the crisis of public finances forces numerous other drastic steps, including inter alia cuts of one monthly remuneration in state offices and one monthly old-age pension, and increasing the basic VAT tax from 20% to 25%. The fact that liquidation of OPFs in Hungary did not ensure a permanent reduction in its budget deficit cannot serve as an argument against the actions undertaken in this country in case of the mandatory capital pillar. The pillar was not the only reason for the annual budgetary deficits. However, it is worth noting that if this pillar had not been liquidated, the problems might have turned out to be so massive that they would have created a huge burden the Hungarian economy and society would find difficult to shoulder.
Open pension funds in Poland: the effects of the pension privatization process

OPFs in Poland – assumptions, effects and perspectives

In 1999, a radical reform of the pension system was implemented in Poland. According to the declarations of its authors, its main objective was ensuring security of the pension system and adjusting this system to the challenges posed by demographic tendencies, consisting in the fact that a decreasing number of people at working age would have to finance old-age pensions of the growing number of retirees. The main change was the above-mentioned transition from the defined benefit system into the defined contributions system. The change results in a significant reduction in the future pensions compared with those received by current retirees from the old system. Additionally, the mandatory capital pillar was established, which apparently was to ensure the independence of at least a portion of the future pension benefits from demographic tendencies.

As the result of the 1999 reform, the ratio of average old-age pension to average remuneration (benefit ratio) in 2007 was 56%, while according to European Commission estimates, in 2060 it will be 26%. Including pillar Two will raise it to about 31%, i.e. in practice it will drop by half [European Commission, 2010, p. 31]. When assessing such a drastic change in the case of Poland, it is remarkable that this change was successfully carried out not as a result of the occurrence of an extraordinary situation (war or crisis). It was implemented during a booming economy during a dynamic development period, as was repeatedly stressed by the government. Of key importance was the fact that this significant change in Poland had not been preceded by a wider public debate concerning possible threats of this reform, in particular the establishment of mandatory capital pillar. Instead, the reform was preceded by a widespread government propaganda campaign, promising citizens high old-age pensions, as well as the possibility of spending holidays in exotic places after retirement. Thus “retirement under the palms” became the symbol of the pension reform in 1999. The information that as a result of this reform, old-age pensions were reduced by half started spreading only a few years ago. Previously, most Poles were convinced that in 1999 Poland reformed its pension system in a way to be the envied and acknowledged by the whole world and that old-age pensions within the framework of the new system would be very attractive. Many politicians, scientists and journalists and financial institutions managing the mandatory capital pillar had a huge influence on the public climate concerning the reform, as well as strong financial ties among the groups that still exist. Also of great significance is the relationship of these institutions, whether through ownership relations or revenues from advertising, to many significant private media. The approach of most of the public media to presenting the 1999 reform was generally limited to supporting the reform’s authors and people associated with financial institutions. Such an atmosphere significantly limits the public debate concerning the real problems of the pension system and stifles the airing of varied opinions concerning this issue.
Following implementation of the reform in 1999, a rule was adopted specifying that the employee's pension contribution charged by the Social Insurance Institution (SII), comprising 19.52% of the monthly remuneration, would be divided the following way:

- 12.22% stays in the Social Insurance Fund and is destined to payment of current pensions within the framework of pillar One,
- 7.3% is transferred to open pension funds (OPFs) – constituting the mandatory capital pillar of the pension system.

Such a division means that as much as 37.4% of the overall pension contributions were transferred to OPFs. Therefore, the necessity arose to cover this loss of contributions from other sources.

Under a law that took effect 25 March 2011, since May 2011, pension contributions transferred by the SII to OPFs were reduced to 2.3% of the employee’s monthly remuneration. Contribution comprising 17.22% of the remuneration is transferred to the Social Insurance Fund. However, it should be underlined that according to this law, the contribution transferred by the SII to OPFs will be increased: in 2013 it is to constitute 2.8%, in 2014 – 3.1%, in 2015 and 2016 – 3.3%, and from 2017 – 3.5%. As the result of these changes, as of 2017 a large portion of these contributions will be again transferred into the financial market, i.e. 18%. This rise in contributions will increase the shortage of resources for current pensions.

According to a February 2012 report by the Ministry of Finance, the public debt of Poland at the end of 2011 comprised 56.6% of GDP, whereas the same debt, but without OPFs, comprised 39.4% of GDP [Ministry of Finance, 2012, p. 39]. It means that the difference between these two indicators comprises 17.2% of GDP constitutes our country’s public debt, which is the effect of the OPFs existence. Therefore, the Ministry clearly stated that establishment of OPFs in 1999 led to additional public debt amounting to over 17% of GDP during the 1999–2011 period. The report states that “about 30% of the public debt of Poland is due to the costs of the pension reform, which has not been introduced in the majority of EU countries”. Obviously, it refers to the pension system reform carried out in 1999, in the form of establishment of the mandatory capital pillar and the OPFs. As a result, a huge, previously non-existent expense from the state budget was created, increasing overall expenditures.

In this context, it is worth bringing up one of the main arguments of the OPFs’ authors: that establishment of the capital pillar reduces the so-called “hidden debt” of the state owed to the baby boom generation, which in turn will help to maintain equilibrium in the repartition pillar in the future [Góra, Chłoń, Rutkowski, 1999]. This argument, presented earlier by the World Bank in the 1994 report Averting the Old Age Crisis, is still viewed as a significant justification for the further maintenance of OPFs. Hidden debt is the hypothetical liabilities of the state to future pensioners, due to contributions recorded on the pension accounts (including valorization of these contributions and so-called initial capital). These liabilities will became payable at the moment of transition into
retirement of particular persons. Since the OPFs were established, these hypothetical liabilities concerning successive years and decades have been ceaselessly converted into the open, increasing public debt. The state must constantly obtain loans in order to cover the loss in contributions transferred to OPFs; otherwise it would not be able to fulfill its obligations to current pensioners. Thus, the OPFs defenders force a difficult-to-accept thesis that it is worth incurring debt today in order to enjoy a better future situation in public finances and be able, thanks to the assets gathered in OPFs, to pay pensions in several years or a few decades when the demographic situation is difficult. Their reasoning entirely misses the fact that in exchange for gathering these assets in portfolios of the OPFs members, the entire society, including OPFs, face repayment of growing open public debt. Its quick growth increases the risk of the country’s insolvency.

According to the state, at the end of May 2012, there were 14 OPFs managed by private institutions, which are General Pension Societies (GPS) functioning in Poland. The stockholders of the GPS are insurance companies and banks, mainly with foreign equity. They usually are huge financial concerns, operating in most countries in the world, with enormous expansion power and the means to effectively influence governments in the struggle to protect their own interests. From the pension contributions, which each month are transferred by the Social Insurance Institution to OPFs, there is immediately deducted a 3.5% charge on behalf of the GPSs (the so-called contribution fee). For more than five years after 1999, the fees charged by all funds were much higher, at 9% to 11%. From April 2004 to the end of 2009, the law held that the charge from contributions could not be higher than 7%. In addition to contribution charges, GPSs also charge monthly fees for managing the assets [GUS, 2010, p. 100–101]. All these charges, which reduced the resources intended for old-age pensions of the OPF members, are not dependent on the results achieved by the societies managing the funds. Even if such results were acquired, in practice it would not reduce the risk for future retirees seeking to transfer a portion of pension contributions to the financial market. Profits accumulated by the GPS from investment of the funds in OPFs are reversible; they may be easily lost as a result of negative tendencies in the financial market, particularly due to financial crises. Another significant factor of the risk related to investment in the financial market is inflation, which may significantly reduce the value of financial assets gathered in future pensioners’ holdings.

The fees mentioned above that are charged by GPSs are irreversible, i.e. not refundable. OPF members are also aware once a contribution is paid in, so-called management fees may be charged every month until the day of transition into retirement, i.e. in the extreme case even for 50 years. There is no guarantee that this ceaseless reduction in the amount of contributions accumulated in the OPFs will be compensated by the profits derived from the investment of these contributions in the financial market. The assessment of this risk should not omit the above-indicated possible impermanency over time of the profits obtained from these investments.
According to the state, at the end of May 2012, the amount of contributions transferred by the SII to OPFs since 1999 amounted to 180.3 billion PLN, while the market value of the assets accumulated in OPFs stood at 232.9 billion PLN. In order to gather these assets, Poland had to incur debt, which at the end of 2011 was estimated (with interest) at over 262 billion PLN (17.2% of GDP), while at the end of May 2012 at over 270 billion PLN. The annual interest on the debt relating to the OPFs may be estimated at no less than 14 billion PLN, assuming average interest rates of Polish government bonds of 5%. In May 2012, yields of the Polish 10-year government bonds amounted to 5.41% and was among the highest in the European Union, which indicates Poland’s weak financial position [Eurostat, 2012a]. Comparing the value of OPF assets with the level of the public debt that the government had to incur in order to refund to the SII the loss of contributions transferred to OPFs, it should be stressed that this debt is nearly 40 billion PLN higher than these assets. Therefore, all of society will have to re-paye a gigantic debt created as a result of establishing this provision towards future pensions that comprise OPFs. Considering the worsening of the situation in international financial markets following the crisis of public indebtedness in the euro zone, growth may be expected in interest rates of government bonds issued by various countries, including Poland. The credit needs of Poland related to the necessity of the debt refinancing, comprising 859 billion PLN at the end of 2011 [Eurostat, 2012b], are very high. In 2012 they were estimated at over 176 billion PLN [Ministry of Finance 2012b, p. 3]. The further maintenance of OPFs, and the increase from 2013 contributions transferred to OPFs by the SII, will accelerate the growth of public debt, deepening the threat to the country’s solvency.

At the end of May 2012, the majority of the OPFs’ assets (53.6%) constituted government bonds issued by the Polish government. The second most important assets were company shares (31.5%). The OPF holdings also contained non-fiscal debt instruments (9.9%), bank deposits and equity securities (4.4%) and other assets [KNF, 2012]. When analyzing all data regarding rates of return achieved by OPFs, published by the Polish Financial Supervision Authority, it is worth taking into account the general regularity of the financial market, i.e., that in a given time the interest on credit (also the debt incurred by the state) is generally higher than the interest rates of investments available in the market. In practice, a reverse situation may be only achieved via skillful speculation that allows profits higher than costs of the credit obtained to finance a particular investment. However, such speculation is always burdened with significant risk and it may lead to serious losses. The fact of financing OPFs from the public debt leads only to increasingly higher indebtedness of Poland and increases the risk of falling into the crisis of public debt.

Because the majority of the OPFs assets are Polish government bonds, the interest of these bonds constitutes the main source of increasing the market value of the fund assets. The absurdity of this situation lies in the fact that these assets will grow pro-
portionally to the increase in interest rates that Poland will have to pay on its bonds. It means that the worse the financial situation of Poland will be, the more money OPFs will “earn” for their members, as only then the interest rates of the bonds will grow. Pension societies may then boast greater efficiency in “multiplication” of the money for the future pensioners and charge higher commission for managing these assets. It should be underlined that the interest transferred by the state to OPFs constitutes one of the main items in state budget expenditures included in the Budget Control Act. For 2012, the act assumed interest in the amount of 43 billion PLN for public debt service. They constitute a liability to all of society. Such construction of a mandatory capital pillar that is based on the country’s increasingly growing indebtedness – in addition to paying financial institutions through commission for managing the assets – should be deemed senseless. The shocking irrationality of the second pillar of the pension system was one of the key factors leading to rejection of this solution by highly developed countries.

It should be stressed that the increase in OPF assets, due to accumulated interest from government bonds, has provided the source – though sometimes insufficient – of compensating the OPF losses incurred by investing in shares the last few years. The shrinkage of the funds’ assets (due to these losses and commissions charged by GPSs) may be quite significant. In the period between November 2007 and February 2009, the net decline in the assets amounted to 32 billion PLN and was higher than the overall amount of contributions transferred in this period to OPFs by the SII, which was 24.4 billion PLN. That means during this period, OPFs not only earned nothing for their members, but they lost much more than they received from the SII. A similar situation occurred in 2011, when the Social Insurance Institution transferred to OPFs 15.1 billion PLN, of which 11.7 billion PLN were lost (stock market declines and charged fees). Some of these losses were compensated at the beginning of 2012, but on the other hand, in the month of May 2012 only, OPFs assets dropped by 4.8 billion PLN [KNF, 2012]. It illustrates the gigantic scale of possible losses that pension funds may incur even in a short period. There is huge harm to public finances because of this wastage, but the gigantic losses are even more appalling in view of the persistent shortages of public resources for basic necessities such as providing medicines in hospitals.

The irrational character of the second pillar is confirmed by the fact that a significant part of the OPF assets is invested in government bonds. It means that in the future, when pensions have to be paid from the funds, these bonds should be redeemed by the state. Therefore, all taxpayers will have to contribute (paying taxes and pension contributions) in order to secure necessary resources for this purchase. If the demographic situation is unfavorable, it is also possible that the situation of public finances would be so bad that the state would not be able to meet its bond-related obligations. Therefore, OPFs do not protect pensions against the risk related to demographic ten-
dencies. Such protection is also not ensured by investment of some funds’ assets in the stock market. The ongoing financial crisis showed that the risk of investment in equity market may be significant. It is difficult to rule out the possibility of serious financial crises in the future, which is of great significance considering that the period for which resources from pension contributions are entrusted to OPFs may last half a century.

According to the International Monetary Fund, the relationship of public debt to GDP in the case of developed countries will comprise 108.2% of GDP in 2015, up to 34 percentage points higher than in 2006, while the level of the public debt in 2015 will be 48,000 billion USD—over twice as high as in 2007, when it was 23,000 billion USD [Talley, 2010]. This huge debt generates huge loan problems for the countries and creates a risk of a significant growth in interest rates in the bond market. It increases the risk connected with these securities. The entities investing in these instruments, including pension funds, should take this risk into consideration. They also must take into account the possibility of public debt restructuring in some countries, which may result either in reductions in interest rates or capital (as happened in the case of Greek government bonds, the value of which was reduced by about 70%). For investors, including future pensioners, it may mean serious losses.

Recapitulation

Practice has shown that the mandatory capital pillar of the pension system, introduced in some new member states, did not prove itself. It turned out that the pension that was be derived from this pillar is burdened with huge risk caused by the financial market instability. High fees charged by financial institutions managing the assets coming from pension contributions negatively influence the level of this pension. The weakness disqualifying the mandatory pillar pension system is that it increases the public debt at a fast pace, affecting in this way the growing risk of a public finances collapse in certain countries. In Poland as well, open pension funds turned out to be a source generating a huge public debt and significantly increasing the risk of the country’s insolvency. A solution in the form of an OPE is also unfavorable for future pensioners, as it does not ensure a secure old-age pension. Therefore, there is no justification for the further existence of these funds. The sooner a decision is made on their total liquidation, the lower the losses in public finances. In practice, the variant applied by Hungary may be considered according to which the fund members can choose (in accordance with the MFID directive) whether to remain in the capital pillar, or return to the repartition pillar. When making this decision they should consider the fees charged by financial institutions and the risk connected with investment in financial instruments.
Notes

1 Social insurance covers several areas: a) old-age pension insurance - providing monthly payment of pension benefit to persons who reached retirement age. b) disability pension insurance - providing monthly payment of a particular sum during a defined period, i.e. due to incapability to work (disability pension), c) sick insurance providing financial allowance in case of sickness, d) insurance due to accident at work – provide payment of compensation and benefits due to occupational diseases and accidents at work.


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