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MODERN ECONOMIC ISSUES AND PROBLEMS

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MAREK MATULEWSKI

INTRODUCTION

The contemporary economy is characterised by a technical progress, an increase in an interest in information and in significance of knowledge, and creation of social, economic and organizational relations became the basis for the contemporary innovative knowledge economy. Socio-economic development requires from contemporary entities permanent adjustment processes just within this range. Hence the subject of interest of the presented position are different aspects of functioning of enterprises in knowledge economy.

The book consists of eleven chapters and their order was arranged so that the reader could gradually get acquainted with the presented subject matter. This monograph has been prepared on the basis of both the vast literature devoted to issues discussed in the individual chapters of this book and results of the authors' studies. The authors are aware of the fact that issues raised by them in the monograph are complex and they do not exhaust the subjects. They hope that this book will arouse interest among representatives of science and business, and will inspire them to undertake further discussion and research.

I

AGNIESZKA BUDZIEWICZ-GUŹLECKA

INTEGRATION AS A WAY OF COUNTERACTING SOCIAL EXCLUSION

1.1. Introduction

Social exclusion means the lack or reduced possibility to participate, influence and use basic public institutions and markets that should be otherwise available to everyone. One of methods of combating the exclusion is the integration of disadvantaged people.

The paper aims at describing the negative phenomenon of social exclusion observed in the society and economy, and presenting ways of combating the exclusion through integration as defined by the social economics.

1.2. Idea of social exclusion

It is difficult to define social exclusion as a phenomenon, since it comprises different dimensions of marginalization. The idea of social exclusion refers to incomplete participation or a lack of it for various reasons in the social life, as well as the economy and culture.

Social exclusion can be described as follows:

- process resulting from accumulation and concerted influence of a number of social and environmental risk factors which make people more vulnerable to e.g. poverty;
- limited or lack of access to various social, economic, cultural and political systems that help individuals to integrate with their environment;
- incomplete material or individual social rights, their inefficient utilization and specific obstacles (Koczur, 2007).

Social exclusion applies to people who:

- live in unfavorable economic conditions, i.e. material poverty,
- do not have suitable life capital to provide them with access to a normal social position, relevant qualifications, and entry to the labor market,
- have personal traits that prevent them from using common social resources due to disability, addiction, long-term illness or other factors, and
- are subjected to destructive influence of others, e.g. violence, bullying, and indoctrination.

Since social exclusion may apply to various spheres of life and people, it is possible to distinguish its different forms:

- economic exclusion expressed as limited or lack of participation in economic aspects of social life,
- physical exclusion linked with disability or age,
- digital exclusion expressed as limited or lack of participation in the life of the information society, namely inability to use computers and the Internet,
- political exclusion described as limited or lack of participation in political aspects of social life,
- cultural exclusion which is limited or lack of participation in cultural aspects of social life,
- structural exclusion related to earning income below poverty threshold,
- normative exclusion linked with social pathologies, e.g. conflicts with law.

There are in fact many more types of social exclusion, just to mentions financial exclusion or energy exclusion.

Social groups that are the most vulnerable to social exclusion are handicapped people, long-term unemployed, elderly people living alone, homeless, people of poor professional skills, and people leaving detention centers.

The American approach focuses on interpreting social exclusion as individual behaviors and their moral assessment. According to that approach, a welfare system makes individuals less motivated to promote their own initiatives and take responsibility for their lives. The British approach interprets exclusion as discrimination and shortage of basic rights resulting from underdeveloped public institutions that limit the possibility for individuals to act. Thus, the exclusion may result from inappropriate operation of the system. In consequence, excluded people are deprived of any possibility to change their situation. The third French approach highlights the role of institutions in the system; the latter supports the society in the process of evolution from the welfare state to a post-industrial state and globalization. According to that approach, the society is based on an idea of an open society (Golinowska, Tarkowska, Kopińska, 2005). Social exclusion is not only a shortage of access to services. It is also the lack of ability to use such services.

1.3. Integration as a method of counteracting social exclusion

Exclusion is a highly complex issue, and as such requires focused and coordinated activities at various levels and spheres. One of methods to combat social exclusion is integration. Social integration is a process involving integration of indi-

viduals or social groups with the rest of the society. Social integration includes secondary socialization of individuals and groups, for instance disabled people. The integration is linked with ideology and politics. The integration is best construed as goals or objectives based on an ideology of democracy, provided we include in the notion of democracy the following: the value of each man and the right of an individual to participate in the functioning of the society. Exclusion and integration are based on the recognition of diversity. It is assumed that every citizen is equal in their value, and thus (s)he is an important member of the society.

We may assume that the most serious threat to the idea of integration of people with disabilities is social exclusion. It means that those people have limited or no possibility to participate in various forms of social life.

Features typical for exclusion and integration are presented in Table 1.1.

Table 1.1. Basic objectives of exclusion and integration

Exclusion	Integration
– Segregation – Limited, restricted participation or lack of it – Marginalization, self-marginalization, discrimination – Elitism and totalitarianism – Egoism and authoritarianism – Social oppression (eugenics, euthanasia) – Disabling society (environment)	– Inclusion – Full participation – Lack of marginalization and discrimination, centrality of citizens, empowerment – Egalitarianism and democracy – Partnership – Cooperation – Sense of community and solidarity – Inclusive society, environment lack of barriers

Source:http://pedagogikaspecjalna.tripod.com/notes/fromexclusiontoinclusion.htm (access: 5.10.2015).

Integration of excluded people requires their active participation. Research on reasons of exclusion and then integration should focus on social groups that require integration. In other words, there is a need to study group measures in terms of methodology as well as patterns used to assign weights to character traits and other indices determining sense of belonging to a group. Moreover, social rules and convention determine the system of opportunities to integrate for people in need of special care (referred to as 'recipients of special support to meet their special needs').

Combating exclusion in Europe has been coordinated under the Europe 2020 Strategy. Europe 2020 aims at promoting development supporting social integration based on two leading initiatives:

1. Developing a skilled workforce and promoting job quality for:
   - individuals, i.e. supporting individuals in acquiring new skills, adjusting to the ever changing labor market needs and making successful shift to another career path,
   - communities, i.e. modernization of labor markets to increase employment, reduce unemployment, improve productivity and secure sustainability of European social models.
2. The European Programme for Combating Poverty, implemented by:
   - ensuring economic, social and territorial cohesion,
   - ensuring basic rights for poor and excluded people, ensuring decent conditions for them and active participation in the society,
   - mobilizing forces to support integration between those people and their communities, and facilitating occupation training and finding jobs and accessing social benefits.

Since the social policy is an integral part of the Europe 2020 Strategy, the Commission supports EU member states in dealing with social challenges. The support is provided through initiatives within the European platform for combating poverty and social exclusion, and a package of social investment, as well as EU funds, in particular the European Social Fund.

Development and investment in particular regions also contribute to growth that facilitates social integration, since they reduce disparities between regions and guarantee common benefits resulting from the development of the entire EU.

1.4. Selected social economy proposals for integration

One of ideas, which may potentially promote social integration with the economy and society, is the social economy and the functioning of social economy institutions.

Social economy is an economic sector in which organizations focus on their social utility, and surplus generated by those organizations is used to implement social goals. The mission is protected by the autonomy of social organization management, democratic decision making and local focus (Giza-Poleszczuk, Hauser, 2008). Simply, it should be assumed that the social economy uses economic mech-

anisms for the implementation of social goals. The social economy is a tool for economic and social mobilization of neglected local communities. It is also a formula for increasing participation of community members in trade and public life (Babis, 2013).

K. Birkhölzer distinguished four alternative scenarios for local development based on the social economy (Birkhölzer, 2006):

- 'top down development': the main actor is the state at all levels from central to regional and local governments;
- 'externally promoted development': development stimulated by inward investors who bring necessary resources, especially finance;
- 'waiting and observing': local actors remain, more or less, passive and dormant;
- 'internally promoted development': while in first scenario the state dominates, in the second one private investors, and in the third fatalism, in this scenario a key role is played by local actors and resources.

Various focus of social economy organizations is presented in Table 1.2.

Table 1.2. Social economy typology

Opportunities and needs Relation to the market	Social economy (reaction to social needs)	Social economy (reaction to new opportunities)
Non-market oriented social economy (social development)	Examples: Homeless shelters, Daily care centers for children, community kitchens, re-integration of school dropouts	Examples: Daily care centers for children, Pregnancy care centers, eco-museums
Market oriented social economy (economic development)	Examples: Training companies, Occupational integration centers, solidarity or social financial institutions (financial products), Culture	Examples: Employee cooperatives, recycling (natural environment), food (catering), culture

Source: (Mendell, 2009).

Social economy organizations include cooperatives, mutual insurance companies, associations, foundations and other similar companies and organizations.

Social economy organizations can develop various forms of cooperation with commercial entities. New forms of such cooperation include (Borzaga, Santuari, 2003):

- economic partnership - *for-profit* organizations buy semi-processed or ready made products from *non-profit* organizations that focus on labor market integration and this provides the latter with financial stability,
- cooperation with socially marginalized people during training - *for-profit* organizations temporarily employ socially marginalized people who participate in training organized by *non-profit* organizations; this is designed to help those people to complete their training,
- cooperation in developing stable jobs for socially excluded people – in recent years cooperation has been growing between *for-profit* and *non-profit* organizations supporting long-term sustainable labor market integration on the open market for socially excluded people who completed dedicated training (there are particularly interesting attempts to develop joint activity aimed at developing job intermediary services for disabled people).

The EU Commission proposed solutions based on the Europe 2020 Programme. We should remember, however, that such issues are best resolved on the local level, since there they are more vivid and it is possible to select more targeted instruments. At the local level, social problems are more articulated and this facilitates their observation. Social economy cannot develop when promoted top down only by a directive function of the state. To develop, social economy needs local, society based organizations.

Those ideas have been successfully implemented, however still to a limited extent, in various strategies involving cooperation between a number of parties while solving local problems. This leads to a major change of the public aid approach – from distribution to active involvement, self-organization and self-reliance. The implementation takes place through social integration centers, social companies, social cooperatives, non-profit organizations based on public-social partnership, etc. Such initiatives are usually bottom up and develop within local strategies for social integration and social enterprise development.

The process of building different forms of social economy, such as local partnerships, is promoted by social animators with relevant understanding of the process. Animation is a method of developing social capital involving social networks and good internal communication. The combination of those factors leads to participative democracy which is a basis for sustainable development. Animation is a skill of encouraging others and involving and motivating them to act for the benefit of the local community. Education of the local community is particularly important, since it is necessary to reach people, institutions and organizations and involve

them in supporting others, as well as organizing a local support network facilitating goals and activities planned. An animator stimulates, encourages and inspires various organizations and sectors (public, economy and society) to develop a partnership cooperation in order to implement sustainable development initiatives. (Budziewicz, 2015).

Openness of local governments to various types of initiatives usually results from the shortage of resources to finance growing needs in such areas as social care and aid. Integration of beneficiaries provides excellent results, not only financial but social as well. It promotes efficient integration of excluded people into the life of the local community. Moreover, it can change the attitude of the society as regards the provision of public funding for socially and economically dysfunctional groups.

Social economy organizations together with local governments create legal framework for citizen self-governance. Thus, they enable creating a system that facilitates representation of interests and resolution of problems while implementing social and economic goals.

1.5. Conclusions

Social exclusion has negative consequences for the economy. Exclusion is not only a social issue but also generates serious economic costs. Those costs can be divided into three groups. The first group includes costs related to remedial actions, i.e. spending related to social care benefits and healthcare. The second comprises lost opportunity costs incurred by the society and economy, since excluded people participate to a lesser degree in economic, social, political and cultural life. The third group consists of costs related to passing exclusion to other generations.

It should be emphasized that people when joining the social exclusion group 'produce' further exclusion. In order to make a change it is necessary to coordinate socio-economic policy and improve cooperation between entrepreneurs, training companies and universities, as well as identify needs in specific regions.

The social economy should be an open segment of the economy as such, since then it can best play its role in integrating people and contribute to social cohesion. In the modern economy, it should be seen not as an alternative sector but a complementary segment.

Social policy is an integral part of the economic policy. Its quality determines not only situation of social care beneficiaries but also the standing of the entire economy and all participants of the market. Social integration cannot have a state character. Moreover, the implementation of the process necessitates serious reori-

entation in the way the state operates. The integration of excluded people with the economy is only possible when it is based on well prepared and comprehensive interventions of properly coordinated state institutions, businesses and social structures. The social exclusion need to be further studied and conclusions drawn on how the excluded can be integrated with the society.

II

ANNA DRAB-KUROWSKA

REGULATION OF MARKETS IN THEORY OF ECONOMICS

2.1. Introduction

The main goal of the economic policy of the state is to ensure economic balance necessary for appropriate and efficient functioning of an economic system. An efficient system, however, requires relevant actions taken by the state. It should be emphasized that the Polish transformation towards the market economy based on freedom of competition could not have taken place solely by creating and implementing the competition law. It was also necessary to implement measures aimed at liberalizing foreign trade, removing the monopoly in the most important sectors, and privatizing the majority of public enterprises. The mere fact of depriving the largest state companies of their monopoly did not create competitive markets. Poland faced a tremendous challenge of creating rules under the public law that could expedite demonopolization process on the one hand, and enable active state regulation of the operation of companies that enjoy a dominating position on certain markets on the other. Such regulation involved mainly statutory or administrative requirements imposed on those companies, designed to implement specific public goals. This created the 'regulation process'. This paper discusses the importance of the regulation for the economy and the society alike.

2.2. Notion and types of regulation

According to the literature, the notion of 'regulation' is used in various scientific disciplines, frequently very different as regards their interests. From a legal point of view, regulation is most often defined as a body of regulations designed to limit the activity of legal entities. In political science, regulation is examined from the point of view of interests pursued by various groups that benefit from introducing and applying regulation. As regards the economics, regulation is analyzed as a way of state intervention, especially in areas of particular significance for the economy. The introduction of the state regulation at a market should be justified by the failure of that market.

While considering the notion of regulation, we should make a distinction between levels of regulation. The following levels of regulation can be distinguished (Gorynia, Jankowska, 2008):

- macro – economy as a whole,
- mezzo – branch or sector,
- micro – company, household,
- micro-micro – an individual (consumer).

However, when analyzing the regulation system from the point of view of companies, traditionally associated with regulated systems, we may determine two planes (depending on party which produces regulation instruments or regulation system):

- self-regulation,
- administrative (state) regulation.

According to the literature, both planes of regulation are opposed to one another. However, this sense of the opposition has been increasingly often criticized, or considered to be artificial. As the traditional liberalism claims, laissez-faire was considered a natural state of things in the process of developing capitalism. That situation was later changed due to state intervention. On the one hand, self-regulation can be considered a particular case of state regulation, and on the other hand, it is a sort of meta-regulation involving a self-restraint of the state imposing a certain solution on itself. (Gorynia, Jankowska, 2008)

Literature distinguishes two types of regulation:

- Economic that concentrates on counteracting monopolistic tendencies in the economy aimed at ensuring efficiency through competition (while taking into consideration public values),
- socio-economic focused on meeting desired social goals and guaranteeing certain level of security for citizens to meet desired social goals, such as safe products, ensuring health and work safety, protection of environment, and protection of consumers. (Trefor, 2005)

The economic regulation aims at creating a basis for eliminating negative economic consequences produced by the market, especially when competition is limited, and creating a basis for a substitute of competition and quasi competitive conditions determining the level of production and prices according to market rules. From the microeconomics point of view, such a regulation should aim at creating a model of ideal competition where prices are equal to long-term marginal costs.

The second type of economic regulation is related to an attempt to establish competitive market structures in the face of existing limitations that may only reduce competition. The first and the second type of regulation concentrates on protecting competition against monopolistic practices of certain companies and discouraging them from non-competitive behaviors in specific sectors. Monopoly in its various forms leads to imperfect competition. Therefore, the regulation by the state (i.e. anti-cartel authorities) boils down to limiting negative consequences of monopolistic practices and, in a broader context, reducing or eliminating inefficiency of the market and consequently improving the efficiency of processes that have taken place in the market economy.

2.3. Market and regulation

The main consequence of having an imperfect market is the necessity of regulating it. According to Adam Smith, the state has the role of developing a robust legal system designed to maintain the social order. At the same time, he believed that the market tunes with the human nature, and thus governments should refrain from intervening into market processes. Smith highlighted that efficient functioning of the market requires as follows:

- robust legal system,
- ownership, and
- morality.

Smith clearly pointed that without a relevant infrastructure, including roads, rail, canals, bridges and drainage, the economy would not be able to operate. While referring to the division of labor, he warned against consequences that the mechanism may have if there is no public education. At the same time, Smith recognized specific drawbacks and considered that such a role is applicable to a body responsible for maintaining order (Aldridge, 2006).

In the 19th c., it was noticed that while attempting to maximize their profit some companies acted against the public interest. This applied mainly to the infrastructure sector, rail in particular, and in a later period also telecommunication and energy. Those companies usually incurred significant fixed cost and low marginal cost of their operation. Development and maintenance of infrastructure, e.g. pipelines, railway track, and transmission lines were extremely costly, which led to significant fixed cost. Once infrastructure is built and operational, the delivery of another unit of commodities costs little, and so marginal cost is low. The growth of cost, however, leads to a natural monopoly. An important feature is a major market

entry barrier (market entry cost is considered unrecoverable) and growing benefits of the production scale. The natural monopoly was considered to be the sign of a market failure (Brol, 2010).

In the second half of the 20th c., G. Stigler presented a different theoretical description of the regulation process. His economic theory of regulation provides a convincing explanation. According to that theory, regulation is a commodity available to the state and the process of allocation follows demand and supply principles. Thus, it is possible to determine factors defining the value of that commodity for potential buyers, namely companies. Thus, regulation is the expression of the power of the state over the economy, which determines the state's capacity to improve or worsen economic position of businesses. Stigler indicated benefits and threats that regulation brings for companies (Table 2.1.) (Stigler, 1971).

Table 2.1. Benefits and threats of regulation for companies

Benefits	Threats
– Direct subsidies and grants – Market entry barriers for other companies under control – Supply of substitute and complementary goods under control – Level of prices determined by administration	– Politicized environment leading to unequal treatment of companies (e.g. increased significance of small companies at expense of large ones) – Slowdown of decision making and cost of regulatory procedures – Influence of non-economic (political) factors on decision making process in companies

Source: (Szablewski 1991).

2.4. Role of state in economy

There are two approaches as regards the role of the state in the economy. The first one promotes the autonomy of market mechanisms which are considered the most efficient when left alone without any intervention of the state (Atkinson 1980). The market is a place where all needs of its participants can be met, and therefore there is no need for the state intervention. According to the second one, the state intervention is a critical factor stimulating economic growth (Jamal, 2002-2003). Market failure and the role of the state in stimulating economic processes have been examined by J. E. Stiglitz. In his opinion, insufficiently aggregated demand is usually the reason of an economic downturn, and the economic growth can be stimulated by the state (Stiglitz, 2007).

The contemporary economics frequently proves that the state has instruments and an obligation to countervail market failures. Economists can be divided

into those that are afraid of market failure and those that are afraid of the state playing economic roles. However, in almost all countries, governments are held responsible for the good status of the economy as a whole.

Globalization, as a global process involving supranational organizations, e.g. World Bank, IMF and WTO, is a factor stimulating questions about the scope, functions and areas of regulation. The analysis of globalization processes based on selected criteria might be a starting point for defining conditions underlying the necessity to introduce or to refrain from introducing regulatory measures.

Three approaches can be distinguished as regards the scope of regulation (Brol, 2010):

- Institutional neoliberalism,
- Diverse regulation, and
- Community particularism.

Although these concepts refer to specific economic policies implemented in Anglo-Saxon countries, in particular by governments headed by Premier M. Thatcher and President R. Reagan, the European Union tends to implement a concept of regulated diversification (Black, 2001).

Taking into consideration a wider context of economic processes, 'sustainable approach' is very much justified. It has been presented in publications by J. E. Stiglitz and involves preferred treatment of sustainable interactions between market processes, market mechanisms and regulatory activity of states. Stiglitz supported a balanced approach towards the role of the state, a role which takes into consideration limitations and inefficiencies of the market and the state, as well as considers the market and the state acting together in partnership. The nature of the partnership vary in different countries, since it depends on their political and economic development' (Stiglitz, 2004, 2007).

It should be emphasized that such an approach covers fixed development factors in politics and economy of particular countries, considered to act as catalyzers. It also examines possible barriers for economic efficiency in relations between an object of regulation and a regulatory institution. We should also consider various, frequently complex changes in the economic, social and political reality. This approach originates from the economic sociology rather than from the plain economics. However, it is fully justified considering rapid changes on global markets, as well as the contemporary external environment of companies. The latter operate with uncertainty and under the pressure to gain and maintain their competitive position on the market. This contributes to a set of conditions determining

barriers pertaining to the allocation of resources as well as to rational economic policy of the state.

Similar opinions have been expressed by J. Tirole. Tirole proposed solutions adjusted to the specific nature of a given sector, which force companies to act in line with the social interest, and at the same time the solutions should not deteriorate their productivity and economic efficiency.

While rejecting the concept of a state reduced to its role of a caretaker, he pointed to the need of having an efficient state. However, for the state to become efficient and meet expectations of its citizens, the state needs solutions and tools facilitating restructuring, competition, increased responsibility of civil servants and promoting methodical monitoring of the state activity as means of objective assessment of its efficiency (Mączyńska, 2014).

Tirole emphasized that the market domination by large private and public companies, especially in sectors having strong influence on the quality of life and society, e.g. energy, media, medicine and education, may have negative consequences. To prevent such consequences, we need well thought state regulatory measures, suitable for the specific nature of a given sector, implementation of which is preceded by a thorough analysis.

Attempting to summarize the role of regulation in the economy, it should be highlighted that a prevailing goal of regulation is to remove market inefficiencies and curtail negative externalities (Blaug, 1994).

This, however, does not define conditions in which such measures are implemented and why sometimes they are not implemented at all. This raises a question regarding conditions needed for regulatory measures to be implemented. The answer might be provided by the economic theory of regulation. According to that theory, economic regulation result from 'mutual regulatory dependencies' or 'regulatory capture' (Surdej, 1997).

The regulatory capture occurs when businesses operating on a given market may influence the activity of a regulatory institution. Consequently, businesses make the institution adopting regulatory instruments that favor those businesses. This means that regulated entities have more power to influence institutions than entities which should benefit from the effects of the regulation. Leaving illegal influence aside, the information asymmetry is quite frequent, since regulated entities provide information which is a basis for the regulatory institution to make administrative decisions (Brol, 2010).

It is interesting how regulation is perceived by businesses operating on a given market. It should be verified whether we may assume that companies will treat regulation as a serious constraint to their economic freedom and flexibility so much needed in decision making. In practice, on the one hand, we have factors promoting increased regulation, and on the other, companies and their organizations, as well as politicians that present a liberal approach and support limited regulation. While politicians claim that it is necessary to implement the idea of justice (whatever it means), businesses propose deregulation since they believe that benefits of regulatory measures are smaller than their cost.

One of solutions pertaining to the intervention of the state into the economic activity is the regulation of private companies controlled by the state. Such an intervention aims at avoiding inappropriate allocation of resources and/or products and services that are not beneficial for consumers. Regulations usually impose certain burdens companies need to bear to operate on a given market. Some regulations apply to all or at least the majority of companies, e.g. accounting principles, central and local fiscal arrangements, publication of periodical reports etc. At the same time, on selected markets, regulations are applied in specific situations only. This is true in particular on imperfect markets, markets that have a monopolistic or oligopolistic structures, as well as on market with monopolistic competition.

Moreover, economic regulation tools limit decision making in companies in terms of determining prices and quantities, as well as their decisions to enter or leave markets, as well as other limitations imposed by law (Szalbierz, 2002). In general, such regulatory tools include standards, contracts, statutory damages, soft law, regulation through information and requests to reveal information (Surdej, 2006).

Businesses may act towards self-regulation. Advantages of it include elimination of information asymmetry, fast and flexible adaptation to changing economic conditions without danger of maintaining outdated regulations and those that pose barriers to positive changes in the functioning of regulated entities, as well as reduced cost of implementation and monitoring of self-regulatory norms and budget savings (Trefor, 2005).

2.5. Conclusions

According to J. E. Stiglitz 'advancement in the theory of economics of 1970s and 80s helped explaining market constraints and showed that unrestricted mar-

kets do not develop towards economic efficiency if information accessibility is imperfect and certain markets are missing (e.g. good insurance market that protects against risk posed to individuals). However, dissemination of information is never perfect, and markets are always incomplete' (Stiglitz, 2004). Stiglitz analyzed situations in which the market cannot be efficient. These are instances related to imperfect and/or asymmetric information (Iwanek, 1998). He further emphasized the significance of technology, since, in his opinion changes of technology are crucial for the development. Markets themselves do not have the capability of increasing their efficiency when a country absorbs new technologies only to eliminate knowledge gap being the main barrier for development. Nowadays, it is considered that markets themselves do not proceed towards increased efficiency and there is a question of whether the government is capable of correcting it' (Blaug, 1994).

Regulatory control methods are particularly important for the Regulatory Impact Analysis (RIA) which is a set of procedures and recommendations that support ex ante assessment, as well as how proposed regulations influence the economy and wealth of citizens.

III

KAROLINA DRELA

SEEKING EMPLOYMENT - MOVEMENTS OF WORKERS ON THE LABOUR MARKET AND NATURAL UNEMPLOYMENT RATE

3.1. Introduction

At the state of high unemployment to find a satisfying and well paid job, it is not enough to possess adequate professional qualifications but it is also necessary to acquire such skills which would allow the candidate to present himself/herself to the future employer in an appropriate way. Searching for new workers by employers is preceded by an analysis carried out by the economic entity (Musiałkiewicz, 2000). However not all employers remember that there is a natural unemployment rate and its analysis will enable making decisions concerning employment.

3.2. Movements on the labour market

Employment is a phenomenon the level of which is measured in a definite point of time (moment). Its level grows if inflows (the unemployed who have just lost work) are larger than outflows (people who have found new jobs or have not been recognized as belonging to labour force any longer). There are three possibilities of becoming unemployed. Some employees are dismissed from work (i.e. they lose their work); others do not work temporarily - but they expect to be employed by the same firm (temporarily dismissed), still other ones quit themselves (resign from work). An inflow enlarging the number of unemployed can also be composed of people who so far have not been classified as labour force. This refers to school graduates (entering the labour market) and those who once worked but then they did not register themselves as unemployed, and now they are coming back in search of work (coming back to the labour market).

People leave the community of unemployed as they find work, give up searching for a job or retire. In practice it is difficult to differentiate people who are not classified as labour force and those who are unemployed: the basis for such assessment is a statement of the fact that the people are actively "looking for a job". To some extent the number of people classified as unemployed is an underestimate of the real number, as some of the people recognised as not belonging to labour force would be inclined to take up a reasonably-paid job, and at the same time

many people who classify themselves as unemployed, actually are not interested in accepting realistic work offers.

Therefore the movements from the work resource to the group of people who do not belong to it, and contrarily, can be presented in a form of relationship illustrated in Figure 3.1. Such movements can be justified, among other things, by the fact of retirement, the end of education or its renewed start, a change in marital status or the number and age of children, or also a change in the character of available work places (Barro, 1997).

Figure 3.1. shows possible movements between three categories: employment, unemployment and people staying out of the work resource.

From the observed relationship the following conclusions can be drawn:

- from the state of being employed one can be moved to the state of being unemployed (2) or a person staying out of the work resource (7) and one can be employed in a different enterprise (1),
- from the state of being unemployed one can become employed (3) or stay out of the work resource (4) (such people are often called discouraged people),
- people staying out of the work resource can get a job (e.g. in the case of majority of graduates or people returning to the work resource or newcomers in the labour market (e.g. graduates) (5)[1].

The total number of people giving up work is the sum of movements 1, 2 and 7, and the total number of people taking up a job constitutes the sum of movements 1, 3 and 6. The difference between the number of those who leave work and the number of people starting work correspond to the change of the employment level. The change in the number of the unemployed is the sum of movements 2 and 5, lowered by the sum of movements 3 i 4. Thus, due to the movement of people to the work resource and from the work resource, the change of employment does not already agree with the reverse of the change in unemployment.

The participation of people in different movements defines the level of employment and unemployment in time. The higher the rate of taking up work, the larger the employment is. However the inflow to the work resource and the outflow from it overlap and interlace with the phenomena of losing and taking up work. People who move between the work resource and the group of people who do not

[1] (1) a change of work without enlarging the group of unemployed or leaving the work resource - this kind of movement is particularly popular with sportsmen or sportswomen; (7) a loss of work accompanied by leaving the work resource - this stream includes permanent retirements and also the cases of leaving the work resource in order to bring up children or to start education.

belong to it, possess relatively small professional experience. On the whole it is just these ones to be dismissed first and employed last.

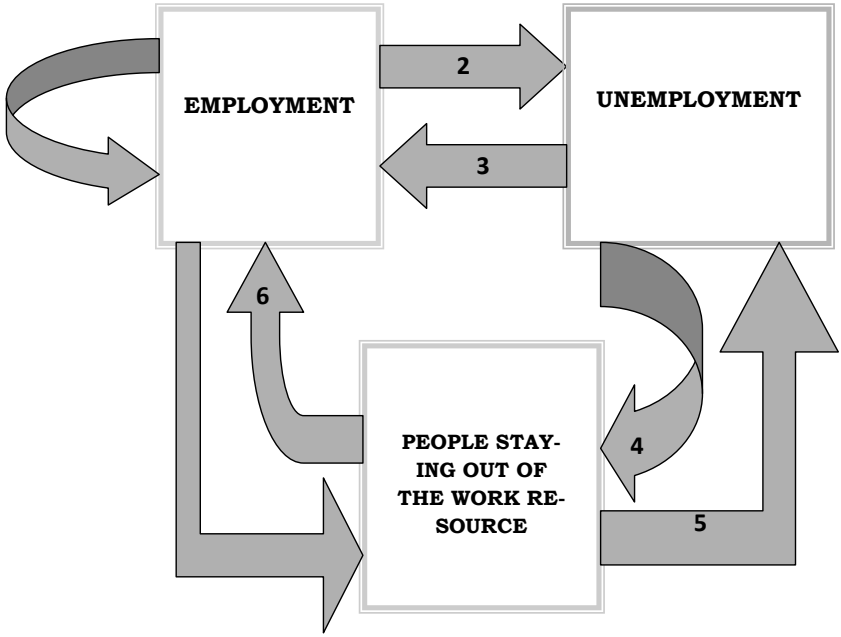


Figure 3.1. The movement of people between three categories: the employed, the unemployed and people not belonging to the work resource
Source: (Barro, 1997).

The differences of natural rate reflect the differences of the rate of giving up and starting work. The formation of the rate of leaving jobs in different demographic groups can be compared on the basis of the analysis of the data relating to time of the employment duration: people with a high rate of leaving the job generally have short periods of employment and contrarily. In order to get the information about the rate of taking up work the data concerning the duration time of unemployment can be analysed. The people who find a job quickly have mostly short periods of unemployment and contrarily.

The research by R. Hall (Hall, 1980, 1982) concerning dismissals from work makes it possible to draw some conclusions. In most cases, when someone gets his/her first new job, he/she does not perform it too long. Along with time passing and people getting older and taking up different jobs, most workers find a job that really suits them and they do it for a longer time. Leaving a job is a phenomenon

much more common among young workers - most of them do not find a job yet, which would keep them for a long period, therefore this element explains to a large extent a higher rate of unemployment among young people.

Most cases of unemployment end by withdrawing from the work resource and not by employment. Then many people out of those who left the work resource appear as ones who look for a job and are classified as another case of unemployment. These periods of unemployment intermingled with the periods spent out of the work resource should, according to the author, be recognised as long periods of unemployment. However, a considerable part of the mentioned people (as well as those who do not leave the work resource) maybe have never searched for work, hence they should not be counted as unemployed. This ambiguity shows the basic problem of defining unemployment.

Taking into consideration natural unemployment rate, the item "unemployment" cannot be excluded from this scheme, as it will always exist. It can be diminished but not liquidated as there will always be a group of people unwilling to work under the given working conditions.

3.3. The dynamics of employment and unemployment and natural unemployment rate

Abandoning the work, taking up a job and the natural unemployment rate can be explained by an example below, where movements of people were depicted only on two segments. Invariability of work resource in time was assumed, L+U (L - *Employed persons*, U - *Registered Unemployed Persons*). Getting retired or enlarging the work resource by new people are not taken into account. Due to the fact of renewing the assessment of both the workers (by the employers) and the work (by the employees) a part of the employed leave work in each period. This is illustrated in Figure 3.2.

The rectangle denoted as L corresponds with the number of employed people and the rectangle denoted as U shows the level of unemployment. The arrow from L to U denotes the number of people who left the job. If the size of work resource is stable and if none of the people who have lost their jobs will not find new work right away (an unrealistic assumption), all those who have lost their jobs are transferred from category L to category U. The change of the number of unemployed has only the opposite sign. In Figure 3.2. the arrow directed from U to L denotes the number of unemployed people who will take up a job in a given period.

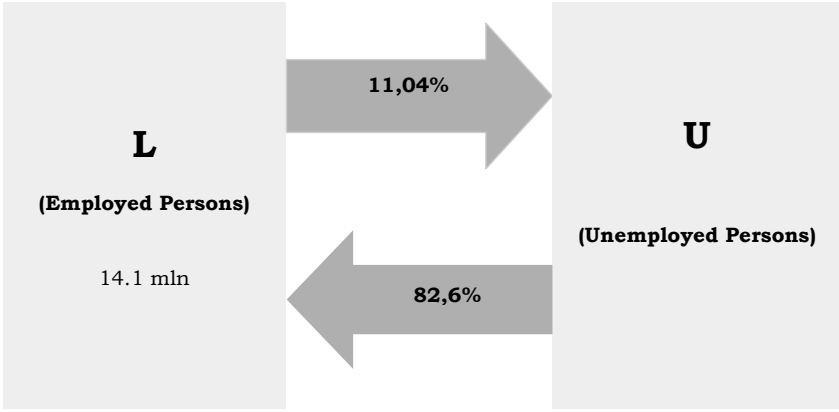


Figure 3.2. Movements between the employed and the unemployed for the year 2010
Source: own work.

Assuming on the basis of Table i.2. that the economy at the starting point (in 2010) has 14.1 million of employed (L) and 1.95 million of unemployed (U), it can be seen that 11.04% of employed lose work in 2010 and 82.6% of unemployed take it up. Thus the nett change of employment is 82.6%U and 11,04%L for the year 2010. The change of the unemployment state is equal to the change of the employment state with the opposite sign.

The process of leaving work and taking up work is observed in order to determine the number of employed people and the number of unemployed people. Along with an increase in the number of employed (except the year 2012) and an increase in the number unemployed, the number of taking up work cases grew (except the year 2012 when it decreased), whereas the number of cases of leaving work has decreased since 2012. As the time passed there was an increase in employment (except the year 2012). Finally the economy reaches such a level of employment and such a level of unemployment at which the same number of people leave work as take it up. Then at the unchanged rate of taking up work and leaving work, employment and unemployment are invariable. In the presented above analysis, the equilibrium of the number of leaving the job and starting it can established for the year 2010 at the rate of employment equal to 11.79%. Therefore it can be said that in this model the natural unemployment rate amounts to more than

11.79%. The economy heads towards this rate automatically, at every rate of taking up and leaving work.

The presented model shows certain important features of the natural unemployment rate. Firstly, although the rate of unemployment establishes at this level, there is still a considerable fluctuation of workers in the economy. At the rate of unemployment equal (assuming approximately) to about 12%, quite a large number of people lose and take up a job in every period. In this model - as well as in the real world - two-way movements between employment and unemployment are a normal element of labour market functioning.

Secondly, the dynamics of employment and unemployment, similarly to the natural unemployment rate, depend on the rate of leaving the work and the rate of taking up work In this example this rate for the year 2010 is equal to 11.04% (respectively: for 2011 - 12.40%, 2012 – 11.46%, 2013 – 10.51%) and 82.6% (respectively: 2011 – 91.73%, 2012 – 74.3%, 2013 – 74.42%). The level of these rates depends on different factors, such as professional experience of a given person, the income of the unemployed persons as well as on the invariability of the supply and demand conditions of the branch. If by σ the rate of giving up work is denoted, and by φ the rate of taking up a job, the change of the number of employed people during a given period, ΔL, is equal:

$$\Delta L = \varphi U - \sigma L \qquad (1)$$

where:

φU - denotes the number of unemployed who take up work in a given time,

σL – the number of employed who lost the job at the same time.

The change of employment is equal to the number of people who have taken up a job, diminished by the number of those who left the job. The employment increases if more people take up work (φU), than lose it (σL). In a reverse situation a decrease in employment occurs. In order to determine the natural level of employment and unemployment, to the above equation the quantity of the change in employment, ΔL, equal to zero, should be put in. Taking the advantage of the condition, according to which the quantity of the work resource L+U, was established as 16061.6 thousand for the year 2010 (respectively: 2011 – 16215.3 thousand, 2012 – 16308.8 thousand, 2013 – 16402.2 thousand) the following values are obtained:

φU= σL=σ(16061.6U) for the year 2010,

φU= σL=σ(16215,3U) for the year 2011,

φU= σL=σ(16308,8U) for the year 2012,

φU= σL=σ(16402,2U) for the year 2013.

Solving these equations in relation to the number of unemployed (U), the natural quantity of unemployment and employment can be defined as:

$$U = 100\,\frac{\sigma}{\sigma+\varphi} \tag{2}$$

$$L = 100\,\frac{\varphi}{\sigma+\varphi} \tag{3}$$

therefore the natural rate of unemployment is:

$$u = \frac{U}{100} = \frac{\sigma}{\sigma+\varphi} \tag{4}$$

thus for:

the year 2010 $\sigma = 0.1104$, and $\varphi = 0.826$, the rate of natural unemployment is equal to $u = 0.1104/0.9364 = 11.79\%$,

the year 2011 $\sigma = 0{,}1240$, and $\varphi = 0{,}9173$, the rate of natural unemployment is equal to $u = 0{,}1240/1{,}0413 = 11{,}91\%$,

the year 2012 $\sigma = 0{,}1146$, and $\varphi = 0{,}7430$, the rate of natural unemployment is equal to $u = 0{,}1146/0{,}8576 = 13{,}36\%$,

the year 2013 $\sigma = 0{,}1051$, and $\varphi = 0{,}7442$, the rate of natural unemployment is equal to $u = 0{,}1051/0{,}8493 = 12{,}37\%$.

It can be observed that the equation (4) connects the natural rate of unemployment with the rate of leaving work (σ) and the rate of taking up work (φ). A higher rate of leaving work increases the natural rate of work, and a higher rate of taking up work decreases it. Therefore studying the differences of the natural rate of unemployment, for example, in time, the differences between the rate of leaving work and the rate of taking up work should be taken into account. It should be emphasised that the people losing work more often or having problem with finding a job, will remain unemployed longer than others.

Table 3.1. The dynamics of employment and unemployment and natural unemployment rate in Poland

Specification	The number of Employed persons (L)	The number of Registered Unemployed Persons (U)	Terminations (σL)	Hires (σU)	The nett change of employment (σU-σL)	The nett change of unemployment (σL-σU)	Terminations - in relation to the number of employed people (σ)	Hires - in relation to the number of employed people (φ)	Hires - in relation to the number of employed people	The nett change of employment in relation to the number of employed people	The nett change of unemployment in relation to the number of unemployed people	The nett change of unemployment in relation to the number of employed people
year	in thous.						in %					
2010	14106,9	1954,7	1557,8	1614,5	56,7	-56,7	11,04	82,60	11,44	0,4	-2,9	-0,4
2011	14232,6	1982,7	1764,8	1818,7	53,9	-53,9	12,40	91,73	12,78	0,38	-2,72	-0,38
2012	14172,0	2136,8	1623,9	1587,7	-36,2	36,2	11,46	74,30	11,20	-0,26	1,69	0,26
2013	14244,3	2157,9	1497,7	1606,0	108,3	-108,3	10,51	74,42	11,27	0,76	-5,02	-0,76

Source: own work based on (GUS, 2014a, 2014b, 2015).

Thus, a given country cannot ensure everyone a good job without simultaneous inflation. One of the causes is the fact that the scale of movements of labour force - or frictional unemployment - remains high even when possibilities of employment are abundant. Apart from frictional unemployment in general unemployment, a larger share in it is that of structural and involuntary unemployment. Even when the rate of unemployment is low, a considerable part the unemployed is composed of those who have lost their jobs and those who remain unemployed for a longer time. Adjustment of the number of vacancies to the number of unemployed does not occur quickly. The natural rate is high, partly because the degree of mobility of the percentage of those who look for better jobs is very high, and partly because the labour market is not able to quickly adjust the number of vacancies to the number of those who want to work.

3.4. Employment and the natural rate of unemployment

The theory of dynamics of the rate of the structural unemployment was presented by Phelps (Phelps, 1968). According to him, changes in unemployment are caused by changes of the natural rate of unemployment (the rate of unemployment in the state of equilibrium), and not by deviations from this rate caused by wrong price and pay forecasts. The basic model assumes that there is equilibrium between actual and expected (anticipated) pay and prices, although it holds the assumption about the imperfect labour market. Therefore significant for unemployment are real features of demand and supply in the labour market, and not nominal money supply, which can be used (under the conditions of rigid prices and nominal prices) for adjusting the pace of bringing high employment onto the path of the natural rate of unemployment. The natural rate of unemployment (resulted from the characteristic of the economic system), defined as a current rate of long-term equilibrium, at the given current resources of capital and other variables, the rate at which current changes of the equilibrium rate are brought to zero. Permanently occurring real shocks (e.g. changes of the rate of profit, number of population, productivity) cause continuous disturbances of the level of the structural unemployment rate and not (like in other models) fluctuations around the path of constant trend of this rate.

Endogenous growth theory of the structural unemployment rate uses three basic interperiodic microeconomic models that explain decisions on employment in the enterprise. The employment of additional labour force results from the analysis of viability of the use of three kinds of assets: the size of physical capital, the re-

source of trained workers and the resource of the consumers of products manufactured by the enterprise. The employment of a new worker by the firm requires bearing some costs to obtain effects realised in the future. This is the investment maximizing the current stream of benefits and future benefits resulting from the increase in the resource of trained workers. Thus at the estimation of work it is necessary to consider the prices (i.e. the percentage rate) of the other factor of production, i.e. capital. Work is an uncertain factor, the rate of abandoning grows along with a decrease in unemployment.

Enterprises along with an increase in the rate of employment have to pay higher remuneration, as an increase in employment positively affects the increase in the rate of leaving work. Firms want to avoid this in order to regain invested in the workers outlays (e.g. training). The employment rate has to increase to compensate the increasing rate of abandoning work. The supply curve is in fact the curve of pay in equilibrium. There are different values of pay expected by a worker, which incline him/her to leave the enterprise. Thus they depend on pay in other enterprises and on prospects of getting employed in them. While these ones grow along with an increase in the employment rate in the economy. At the intersection of the two curves the current value of natural rate of employment is obtained, i.e. such one which does not tend towards changes at a given moment.

The demand for work is also influenced by the resource of the clients of a given firm, causing increases in profits through their purchases. It is assumed that clients are fully informed about levels of the prices at which individual manufacturers sell their products. It means that in the case of an increase in the price above the competitive level they gradually leave the supplier with whom they have cooperated so far. From the point of view of the enterprise, the adjustment of the price to the marginal costs is not profitable, but it is the maintenance of some loading reflecting disturbances in the information about conditions of the supplies in other manufacturers. The enterprise faces variability: even though a higher price means a rise in the discounted stream of profits (the value of the firm grows), simultaneously the decrease in the resource of clients weakens this effect. At a high real value of the resource of clients loading for costs should be low, the curve of demand for work is inclined negatively and the rate of employment depends on the value of the discussed resource of the product suppliers.

The third model based on the resource of physical capital is analysed in terms of two sectors: consumption goods and capital goods. A growth in the real price of this resource increases the rate of employment necessary for the equilibri-

um in the goods market. One of the consequences of this model is a shift of the aggregate demand towards consumption expenses or state expenses (budgetary) which cause a growth in the rate of unemployment as they increase the percentage rate and decrease prices of the assets and thus demand for work. Taking these three resources into account leads to the following conclusion: under conditions of the closed economy the path of unemployment in equilibrium is defined together with the percentage path and prices of these assets; while these are determined in the capital market.

In Phelps's structural theory there is also a direct relation between the percentage rate and employment and unemployment in the open economy. A stable increase in real percentage rates in the world market because of devaluation, a decrease in real prices of capital lower demand for work causing a growth in structural unemployment in every country integrated with the international world market (Socha, Sztanderska, 2000).

Summing up, it should be stated that all the macroeconomic schools mentioned here accept the existence of unemployment in equilibrium, which in a long-term period is not susceptible to the influence of monetary factors, but depends on real forces, the structure, institutions, technologies, etc. It is also the basis around which oscillates real unemployment as well as that occurring in a short-term period. The confirmation of this phenomenon is lack of the trend to unemployment within a long time in a given time. The significant differences in the unemployment rates between different countries show structural and institutional basis of these rates. In this sense unemployment has features of natural unemployment. The term "the rate of unemployment "natural unemployment" lacking a normative connotation seems more correct as it directly shows the sources of this unemployment.

Both the mechanism of bringing unemployment to its "natural" basis (automatic mechanism of balancing or macroeconomic policy) and defining equilibrium (e.i. demand and supply in the labour market, actual and expected pay and prices, unemployment and vacancies) as well as distinguishing a natural rate of unemployment are the subject of different depictions in individual macroeconomic models. Although the unemployment rate itself is defined in terms of equilibrium, it can be introduced both for the model of general equilibrium and for the models of imbalance with rationing of demand (vacancies) or supply (unemployment). This rate is not stable, it can change in time. In the newest depictions particular attention is paid to specific relations between the employee and the employer which result in rejecting a static traditional mechanism of equilibrium in the labour market in fa-

vour of dynamic kinds of balance. The curve of demand for work in Phelps's depiction represents different points of the enterprise equilibrium understood as the achievement of such a level of pay where no stimuli to leave work or change the employer occur. It can be treated as the equilibrium curve, as demand for work is a supply function realised by the enterprise at the equality of actual and expected prices. In this model, due to training costs and turnover, the final product of work does not equal pay, and price do not equal final costs of production. In the concept of NAIRU demand for work results from behaviour of the firm performing under the condition of imperfect competition and using its market force for maximizing profit by fixing prices in relation to production costs[2].

3.5. Conclusions

In the situation when the offered workplaces and the workers who can apply for these workplaces do not match one another, the pairing of the workers with the workplaces is a long-run phenomenon. Employers search for more efficient workers, potential workers at better-paid posts. Thus the job search process shows that some people looking for a job will remain jobless and some workplaces will remain vacant. Then there is a natural rate of unemployment which grows along with the increase in the rate of leaving the job and decreases along the growth in the employment rate and which is influenced by the inflow to the work resource and outflow from it.

[2] The curve of work supply is interpreted as the curve of pay in equilibrium, which grows along with the rate of employment. In the NAIRU model it means an increase in the bargaining power of workers, in the Phelps's model, it means an increase in the costs of a possible number of leaving the job by workers. It is the function of the pay level in a given enterprise, expected pay in other firms, income from financial assets, property and the rate of unemployment.

IV

AGNIESZKA GOZDEK - ELŻBIETA SZARUGA

ANALYSIS OF FACTORS OF GHG FROM ROAD TRANSPORT WITH LMDI APPROACH

4.1. Introduction

The article raises the question of the mitigation problem and factors of GHG emissions from road transport. It consists of two parts. The first describes the general problem of mitigation of GHG from road transport in the context of global changes of decarbonization policy. The second part shows the analysis with the LMDI approach to decompose the GHG change to separate components.

This article aims to identify the mitigating factors and effects of changes of GHG emissions from road transport.

4.2. Mitigation of greenhouse gas emissions in transport

In the European Union transport sector is claimed to be one of the biggest emitter of greenhouse gas. According to statistics responsible for emissions in percentage are: in 29,2% represents energy industry, 24,3% transport, 17,7% industry, 12,5% residential and commercial, 11,3% agriculture and 5% represents by others. The Organisation Internationale des Constructeurs d'Automobiles (OICA) emphasizes comprehensive action across all sub-sectors of human activity related to the reduction of CO_2 emissions. The other sectors which are included to global emitter are presented in the Figure 4.1.

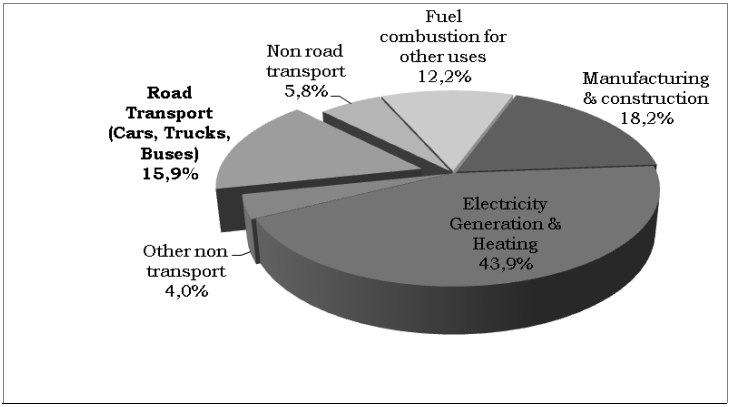


Figure 4.1. CO_2 emissions
Source: http//www.oica.net

Mitigating the effects of greenhouse gas emissions may lead to different consequences, so it is important to carry out the decomposition analysis of GHG emissions per component factors. The goal is that you can identify sources that generate the highest emissions, as well as those that reduce them. This is achieved by a method, known under the acronym LMDI (Logarithmic Mean Divisia Index). The main concept of this method we introduced in the article *Analiza dekompozycyjna wzrostu emisji gazów cieplarnianych z transportu samochodowego na przykładzie Polski i Rumunii* (Gozdek, Szaruga, 2015).

W.W. Wang, HM. Zhang and M. Zhou made the empirical studies of CO_2 from transport in China, based on assumptions LMDI methods. The study sample included the years 1985 to 2009. To identify the driving factors, the CO_2 emissions growth is decomposed into six factors: emission coefficient effect, transportation services share effect, transportation modal shifting effect, transportation intensity effect, per capita economic activity effect and population effect. The main conclusions may be summarized as follows (Wang, Zhang, Zhou, 2011):

- The per capita economic activity effect, transportation modal shifting effect and population growth effect are found to be primarily responsible for driving transport sector CO_2 emissions growth over the study period.
- The transportation intensity effect and transportation services share effect are found to be the main drivers of the reduction of CO_2 emissions in China. However, the emission coefficient effect plays a very minor role over the period 1985-2009.

In Poland, the decomposition index methods were used by W. Suwala, K. Iskrzycki and P. Kaszyński to recognize the factors of SO_2 reduction in Polish power plants in 1995-2008. The authors chose three methods for which the equations have been written in the additive form. The first of these is an improved method of Laspeyres (RLM), which is characterized by the absence of residual factor (perfect decomposition). The second is the arithmetic mean of Divisia (ADM), which implies the presence of residual factor. The third chosen methods was the Logarithmic Mean Divisia Index (LMDI), which also allows to obtain a perfect decomposition. The authors identified four factors that determine the SO_2 emissions: process, fuel, efficiency and demand. The results indicated that the greatest impact on change the final emissions of SO_2 were the first two factors. Changing the fuel factor could indicate of improvement the quality of the used fuels (smaller sulphation), by introduction of technology to reduce sulfur emissions was made change in the process factor (Mizgajski, 2014).

According to literature the reduction of GHG emissions in transport sector compromises many policies. The most influential policies are: vehicle efficiency improvement, pricing carbon, and reducing the carbon intensity of transport fuels (The Center for Climate and Energy Solutions (C2ES), 2011).

In order to achieve reduction of GHG emissions in transport all transport authorities must evaluate and monitor to guide their action. Evaluation must be carried out in four categories: (OECD, 2009)

- transport demand,
- transport mode,
- fuel type,
- fuel efficiency (constitute of vehicle fuel efficiency and traffic flow efficiency).

Data which must be delivered to assess progress include fleet composition and characteristics, activity data, mode share, fuel consumption and emission rates for each mode. Those four categories is vital for government policies which they should use as analytical base for assessing the proper source of GHG emissions in transport (OECD, 2009). The OECD report takes into account 5 strategic areas in order to minimise greenhouse gas emissions. Those areas are (OECD, 2009): fuels, vehicle efficiency, traffic management, demand management policies (including land use), mode shift. For policy makers it is advised to use matrix (Table 4.1) in order to evaluate emissions reduction potentials.

Table 4.1. The scope of matrix

	Travel demand	Mode share	Fuels and energy	Vehicle efficiency	Traffic efficiency
Land use planning					
Public transport					
Freight transport					
Passenger vehicles					
Road network					
Fiscal and economic measures					
Technological research and development					
Information and education					

Source: (OECD, 2009).

Advanced technologies can be the answer for reduction of CO_2 emission. Using of electric-drive technologies, including hybrid - electric power trains, fuel cells and battery electric vehicles is promising strategy for mitigation the side effect of conventional transport in general. Moreover, greater improvement is owing to alternative fuels such as natural gas, biofuels, electricity and hydrogen. Nevertheless, it is advisable by policy makers major modal shifts by using more eco-friendly modes of transport or combined transport (Climate Change 2007: Working Group III: Mitigation of Climate Change).

Labelling of vehicles regarding the CO_2 emissions and fuel consumption with goal of better information may not necessarily have a direct impact on reducing greenhouse gas emissions, but in conjunction with the tax stimulus customer can choose to buy low-emission car.

The European Union introduced a Directive 1999/94/EC of the European Parliament and of the Council of 13 December 1999 r*elating to the availability of consumer information on fuel economy and CO_2 emissions in respect of the marketing of new passenger cars* (Official Journal L 012, 18/01/2000). According to the Directive reliable and comparable information about these values is to encourage manufacturers to take steps to reduce the fuel consumption in produced cars.

Another label concerns the labelling of tires. Regulation of the European Parliament and Council Regulation (EC) No 1222/2009 of 25 November 2009 *on the*

labelling of tyres with respect to fuel efficiency and other essential parameters (Official Journal of the European Union|L342/46). This regulation shall apply from 1 November 2012. Its goal is to increase security and economic and environmental efficiency of road transport by promoting the tires allowing the reduction of consumption that are safe and have low noise levels.

Labelling is to enable potential consumers aware of choosing the right product (Regulation 1222/2009). Information on the label include: rolling resistance, wet grip, noise. The European Union expects that the program tire labelling will save between 2.4 and 6.6 million tons of oil and 1.5 to 4 million tonnes of CO_2 per year, making it easier for fleet operators to cost-effective fuel choice of tires (Goodyear Dunlop Tires Europe B.V., 2012). Improving the energy efficiency of road transport and thus reduce emissions by reducing the rolling resistance of tires. Due to rolling resistance tires account for 20% - 30% of fuel consumption of vehicles (Regulation 1222/2009). The example is shown on Figure 4.2.

Reading the tyre label
Your tyres will come with a label divided into three sections with information on:
1. Fuel Efficiency
Depending on the tyre's rolling resistance, its Fuel
Efficiency Class will range from:
• **A** is the most efficient tyre and will save you fuel;
• **G** is the least efficient tyre and will use up the most fuel.
2. Wet Grip
The Wet Grip rating tells you how well the tyres perform in wet conditions on a scale from A (safest)
to G (worst performing tyre).
3. Noise
A tyre's noise level is measured in decibels (dB) using a three wave scale.

A brand space provides the manufacturer's details,
including the trade name/mark, tyre line, tyre dimensions, load index, speed rating, etc.

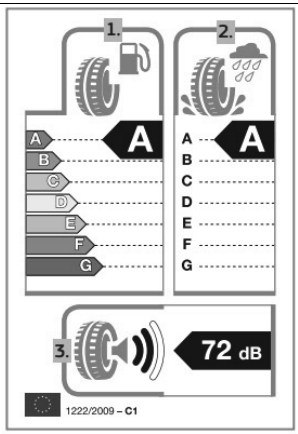


Figure 4.2. The example of tyre labelling with instruction

There are three classes of tyre: C1 Car tyres; C2 Van tyres; C3 Lorry and bus tyres
Source:http://ec.europa.eu/energy/en/topics/energy-efficient-products-and-labels/tyres

Transport is characterized by a large fiscalism. The variety of fees and taxes is also in road transport. Tax measure also affects the CO_2 emission. Taxes associated with the emission of greenhouse gases not in all member countries were introduced. In the 20 EU countries[3], fiscal stimulus was applied on passenger cars partially or completely based on CO_2 emissions or fuel consumption (www.acea.be).
The European automobile manufacturers industry positively refers to the CO_2 tax. However, it is necessary uniformity in the implementation of the tax system. Fuel consumption regulations were effective in inhibiting the growth of greenhouse gas emissions, but so far the increase of transport activity exceeded this impact. The overall effectiveness of standards can be significantly enhanced if combined are tax incentives and information to consumers (Ribeiro, Kobayashi, Beuthe, et al., 2007).

Carriers take the challenges regarding the reduction of CO_2 emissions. Due to legal, tax instruments the European Union aims towards established goal of reducing greenhouse gas emission.

4.3. Decomposition of the carbon dioxide emissions from road transport

On the basis of the cited literature, the authors made an attempt to carry out the analysis of changes in carbon dioxide decomposition example of France.

A decomposition analysis of the carbon dioxide emission from road transport has been carried out for France, based on selected indicators proposed by the OECD (OECD, 2015). Time scope analysis covers the period 2008- 2012 and the decomposition has been made on the basis of changes in the horizon 5-year (base year 2008) and the horizon year (previous year).

Total GHG emissions in transport (understood through the prism of CO_2 equivalent) are the result of changes in greenhouse gas intensity, energy intensity of vehicles, the intensity of road transport, economic activity (per person) and the population, in France in the years 2008-2012, which can be represented by the equation:

$CO_{2t}=\sum INCO_{2t} \times EIV_t \times IT_t \times IC_t \times POP_t$, what is synonymous with following equation:

$$CO_{2t}=\sum^{t} \frac{CO_{2t}}{EC_t} \times \frac{EC_t}{RT_t} \times \frac{RT_t}{GDP_t} \times \frac{GDP_t}{POP_t} \times POP_t$$

[3] Austria, Belgium, Croatia, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Latvia, Luxembourg, Malta, Netherlands, Portugal, Romania, Slovenia, Spain, Sweden and the United Kingdom. (status on 27.03.2015)

where:

CO_{2t} – greenhouse gas emissions (CO_2 equivalent) in transport (1000 t CO_2eq),

$INCO_{2t}$ – the intensity of carbon dioxide emissions, expressed as the quotient of the carbon dioxide emissions and road transport to the energy consumption of this type of transport (kg CO_2eq/kgoe[4]),

EIV_t – vehicle energy intensity expressed as relationship of energy consumption by road transport to traffic by mode of transport (Mtoe[5]/veh-km[6]),

IT_t – the intensity of road transport, which is the quotient of the intensity of road traffic and GDP (1000 veh-km/PPS),

IC_t – economic activity per capita, income of person, that is the relation GDP *per capita* (PPS/capita),

POP_t – average annual number of population (capita),

EC_t – energy consumption by the road transport (1000 toe),

RT_t – intensity of road traffic (veh-km),

GDP_t – Gross Domestic Product (in PPS).

As is evident from the data presented in Table 4.2, a noticeable is decrease of GHG in road transport, while intensity of GHG has increased during the considered period. The increase was also reported for GDP/capita and population/capita, but decrease - for vehicle energy intensity and intensity of road transport.

Table 4.2. Decrease in greenhouse gas emission from road transport and component factors in France in 2008 and 2012

Items	2008	2012
GHG in road transport (1000 t CO_2eq)	125 401	125 099
Intensity of GHG (kg CO_2eq/kgoe)	3,18	3,25
Vehicle energy intensity (Mtoe/veh-km)	71,47	68,35
Intensity of road transport (1000 veh-km/PPS)	322,98	310,66
GDP/*capita* (1000 PPS/os.)	26,65	27,74
Population (capita)	64 178 710	65 418 852

Source: own calculation, based on data from Eurostat (EUROSTAT 2015, access: 07.12.2015).

[4] kgoe – kilograms of oil equivalent.
[5] Mtoe – million tons of oil equivalent.
[6] veh-km – vehicle-kilometre it is a measure of the operation, particularly the movement of motor vehicle a road vehicle at a distance of one kilometre.

As outlined links, get the authors to submit GHG decomposition from road transport in absolute terms and percentage (relative) on the basis of the method, called LMDI by effect: the intensity of GHG, energy intensity of vehicles, transport intensity, income, populations means the relative GHG changes in road transport due to a change in these factors in the first equation. Figure 4.3. shows the absolute GHG changes, which are the results of accumulated other factors.

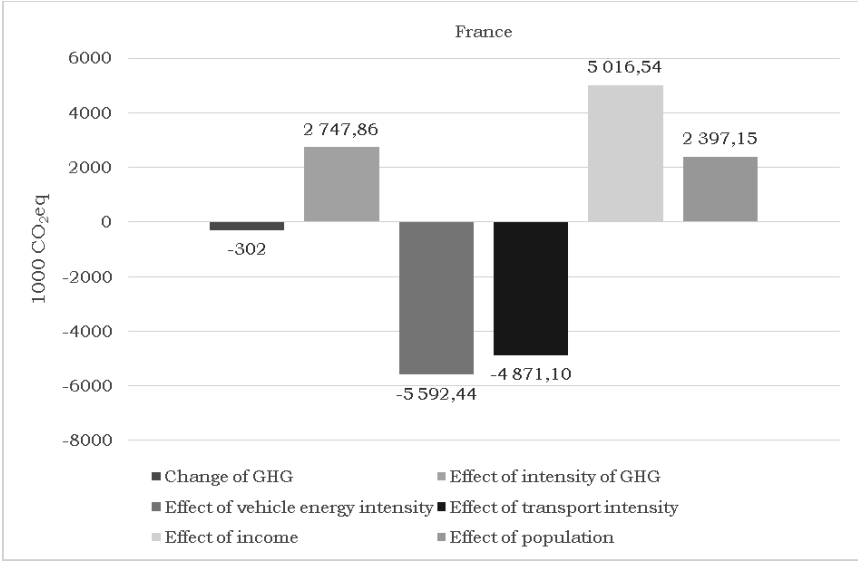


Figure 4.3. Absolute changes in GHG from road transport and major factors for the France in 2012 compared to 2008
Source: own study based on data from Table 4.2.

The data presented in figure i.3 shows that greenhouse gas emission in 2012 fell by 302 000 t CO_2eq in relation to 2008, it is an increase of 0.24%. The strongest factors that influenced this fall were the effect of vehicle energy intensity (decrease), the effect of income (increase) and the effect of transport intensity (decrease). The weakest factor is the effect of population (increase). The effect of vehicle energy intensity sparked decrease of GHG about 5 592,44 thousands t CO_2eq (4,46%), the effect of income caused increase of GHG about 5 016,54 thousands t CO_2eq (4%), the effect of transport sparked also decrease of GHG about 4 871,10 thousands t CO_2eq (3,88%). The percentage change has been shown on the Figure 4.4.

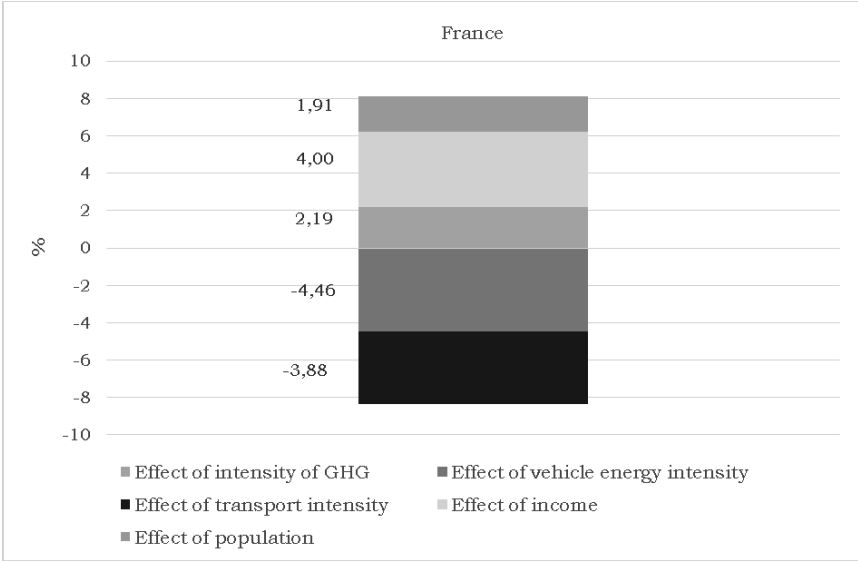
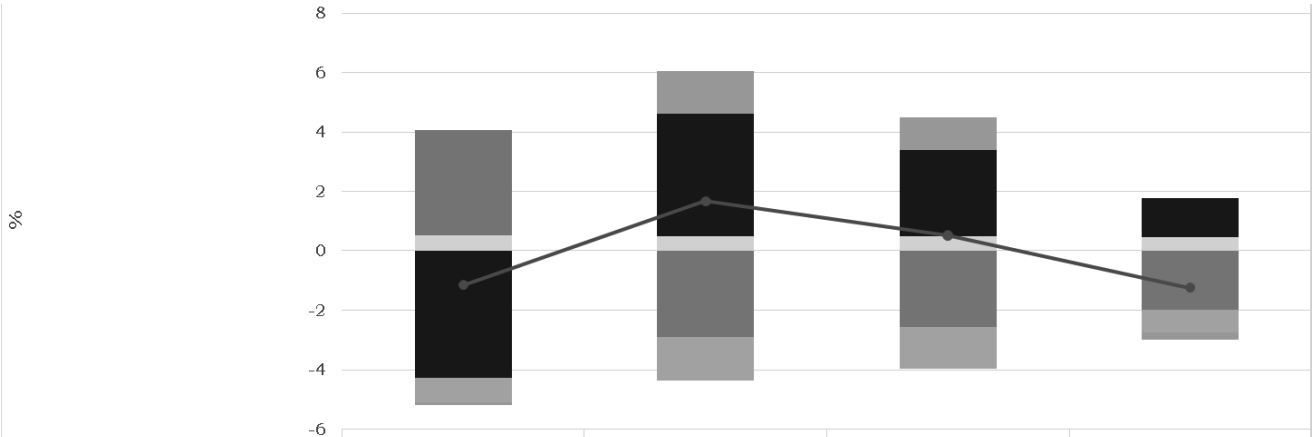


Figure 4.4. Percentage changes in GHG from road transport and major factors for the France in 2012 compared to 2008
Source: own study based on data from Table 4.2.

As the Figure 4.5 shown, the GHG decreased to previous year in period 2008-2009 and 2011-2012 (respectively -1.16% and -1.24%) and increased in period 2009-2010 and 2010-2011 (respectively 1.66% and 0.52%). The same situation was for effect of intensity of GHG. As it can be seen on this figure, the effect of vehicle energy intensity has been decreased and effect of population has been increased. The other effect has been fluctuated in those periods (changes to previous year). Those fluctuations has been impacted to the volatility of GHG.



	2008–2009	2009–2010	2010–2011	2011–2012
Effect of intensity of GHG	-0,08	1,42	1,12	-0,25
Effect of vehicle energy intensity	-0,83	-1,46	-1,40	-0,78
Effect of transport intensity	3,55	-2,91	-2,57	-2,00
Effect of income	-4,30	4,13	2,90	1,33
Effect of population	0,50	0,49	0,48	0,44
Change of GHG	-1,16	1,66	0,52	-1,24

Figure 4.5. The aggregate effect of annual percentage change to the previous year of the CO_2 from the road transport in France in the period 2008-2012
Source: own study based on data from Eurostat.

4.4. Conclusions

In this article the problem of GHG mitigation was discussed. In the first part authors highlighted the global issues of reduction GHG emissions and cited the study of foreign authors who also examined the factors and problem of GHG mitigation. This part of paper also included the modern approach, which not only based on the regulation, but also on the advanced technologies and description of LMDI. The second part focused on the empirical study with using the LMDI method. In this part of paper the decomposition analysis of GHG from French road transport was conducted. As it showed, it is several factors influencing on the decrease of the GHG emission, such as transport energy intensity and transport intensity, which are the most important measures in transport.

V

URSZULA GRZEGA

ECONOMIC DETERMINANTS OF HOUSEHOLDS' STANDARD OF LIVING

5.1. Introduction

The standard of living, understood as the degree of satisfaction of human needs resulting from the consumption of material goods and services, and the use of natural and social environment values (Bywalec, Rudnicki, 1999), is conditioned by a series of different determinants. They exert their impact on the macro- and microeconomic scale. The macro-determinants are the indirect conditions, deferred in time, non-measurable and independent from consumption entities (including households, which in addition to the total population of the country are the main subject of research on the standard of living). Factors affecting the households' standard of living on a micro-social scale have a different character. They much more often depend on the consumption of entities, i.e. the specific decisions and actions taken in the household, and their impact on the degree of satisfying needs is often referred to as direct and measurable. In this group there are distinguished economic, socio-professional and demographic factors, with the critical importance of the first parameter. This chapter successively describes the economic external factors, such as: supply, price, institutional information system, and economic internal factors, such as: income, savings, loans, household assets, leisure time.

5.2. External factors (independent from households)

One of the factors determining the boundaries of satisfying consumption needs is the supply, which is understood as an offer of sale of goods and services in specific ranges (assortment, qualitative, territorial and temporal). It may be a limiting or enhancing factor of the households' standard of living. An insufficient number of products on the market can lower the standard of living of entities, and ultimately lead to eliminating the satisfaction of some needs. In such a situation it is important to meet the needs outside the market, in the context of natural consumption. On the other hand, the abundance of consumer goods and services creates good conditions for meeting the needs of households. The consumer market, characterised by a wide range of products, competitive in terms of price and quality,

provides greater consumerist freedom. However, this may complicate the purchasing decisions of consumers and often lead to the abandonment of purchase, resulting in failure to satisfy a given need (Grzega, 2012).

Analysing the impact of supply on the households' standard of living, the importance of the public offer should also be stressed. Its size and structure largely determines the degree of satisfying household needs, both in general as well as for selected groups. Substitution correlations between goods and services offered in the context of private and public consumption are widely known, which means, among other things, that a richer public offer reduces the need to earmark private financial means of the household to satisfy some needs (e.g. in the field of culture and education). It is also worth noting that some public goods are of 'irreplaceable' nature in shaping households' standard of living (e.g. public safety) (Fiorito, Kollintzas, 2004).

Another economic factor of external nature determining the standard of living of households is the price. The confrontation of household needs occurs on the basis of prices for consumer goods and services (Lieu, Liang, Chen, 2008). The price impact is defined as indirect one because only in conjunction with income it translates into the choice of the set of goods and services intended to satisfy the needs.

The role of the price in shaping the households' standard of living is mainly expressed in the cost of maintaining the household. Because this cost results from the market prices of consumer goods and services (Muller, 2002). The largest proportion of it compose prices of foodstuffs and housing fees and energy.

The cost of living of households vary between individual households even when they encounter the same prices for goods and services. These differences result from different needs, preferences of households as well as from different levels of wealth of entities. For example, less affluent households consume proportionately less expensive goods compared with highly affluent households, which lowers the cost of maintaining their families[7]. On the other hand, their limited financial liquidity forces them to buy goods in small quantities (in small packages), often at higher prices, which increases maintenance costs. Another example is the lack of modern means of transport in less affluent households, which may result in higher transport costs in total in the household. The cost of living of households also depends on: the size of households (this variable is negatively correlated with the cost of living, which means that within an increase in the household size, the unit cost

[7] Based on an analysis of actual prices paid by households, American researchers concluded that less affluent households also pay far less for basic consumer goods (per 1 person) compared to highly affluent households. For more: (Broda, Leibtag, Weinstein, 2009).

of maintaining its members decreases) (Rao, 1997), place of residence (higher maintenance costs borne by urban households, particularly those located away from discounters) (Chanjin, Myers, 1999), seasonality (cost of living is lower in summer than in winter, especially in the case of rural households).

In the modern economy, the price performs several essential functions (income, informative, balancing, stimulating, redistribution). But from the point of its impact on the standard of living, the most important is the income function. It involves the shaping of real household income (any rise in prices reduces the real income of the household and vice versa) (Lewandowski, Sztyber, 1987). What is important, this is not only the level of current prices, but also their dynamic changes as an expression of the state price-income policy. As to how price changes affect the satisfaction degree of consumer needs of households, this is mainly determined by the time associated with adapting to these changes. In general, the adaptation time is not long, and as the standard of living increases, it becomes shorter. It is also worth noting that there are different reactions of households to the price increases of goods and services depending on their level of wealth. Generally, less responsive to the increases are highly affluent households. This does not change the fact that they usually also attach considerable importance to the prices of consumer products and strive to achieve their usual basket of goods and services of specified quality at the lowest possible prices. The efforts of everyday savings may be offset by the purchase of any luxury product. Less affluent households are much more sensitive to price changes. In their case, it is the price that determines the basket of goods and services purchased. Generally, apart from modifications in the real income, changes in prices also shape the new conditions of substitution (Górecki, 1979), which also translate into the degree and manner of satisfying the needs in the household.

In the process of satisfying the consumer needs, households are to a large extent also driven by the institutional information system. This system consists of a set of measures by which market actors appearing on the supply side communicate with consumption entities. It allows households to acquire knowledge about how to satisfy the needs, including specific goods and services, their functional values, substitutes, etc. In addition to informing households about the possibilities of satisfying needs, the institutional information system contributes to the creation of entirely new needs and modifies those pre-existing ones.

5.3. Internal factors (dependent on households)

One of the most important factors of households' standard of living is income. Typically, the level of household standard of living is improved with the increasing levels of real income and vice versa. Of course, income growth does not always improve the level of need satisfaction, because it can be designed to increase savings for purposes not connected with the functioning of a particular household or simply squandered. Furthermore, it is impossible to indefinitely raise a high or very high standard of living. Thus, a positive relationship between increased income and improving the quality of life can be and often is true, but only to a point.

The importance of income as a basic factor of standard of living results from the fact that, *inter alia*, it is a primary factor in relation to others. It is also a measurable quantity, which enables the study of interdependence in the sphere of real phenomena and economic processes. Income indirectly expresses the changes taking place within other factors and enables the analysis of supply and consumption, according to many additional features differentiating households.

Considering the impact of income on the household standard of living, the category of available income is particularly taken into account. Household's available income is defined as a sum of household's current incomes from various sources reduced by prepayments on personal income tax made on behalf of a tax payer by tax-remitter, by tax on income from property, taxes paid by self-employed persons, including those in free professions and individual farmers and by social security and health insurance premiums. The available income covers both income in cash and in kind, including natural consumption as well as goods and services received free of charge. Available income is allocated to expenditures and savings increase.The available income comprises: income from hired work, income from a private farm in agriculture, income from self-employment other than a private farm in agriculture, from free profession, income from property, income from rental of a property or land, social insurance benefits (of which retirement pensions and pensions), other social benefits, other income (including gifts and alimonies) (Household Budget, 2015).

The largest part of households' available income comes from permanent paid work and related benefits guaranteed by law such as: pensions, sickness payments, paid maternity leave (Vogel, 2003). The level of household available income is also affected by income from other sources, including income handed over to the house-

hold by others, e.g. in the form of so-called 'transfers' from parents to children (Smeeding, Weinberg, 2001).

The level and distribution of income of households are moulded by the configuration of three basic elements, such as: labour market, the role of the state in shaping the living conditions of households (the scope of public consumption, the level of social benefits) and family. With the increase of the available income households obtain greater market freedom. Significant differences in the way the remaining part of income is distributed appear after satisfying the needs at the elementary level. Higher-level needs are becoming increasingly important. A major role in this respect plays a free, remaining after covering basic expenses, part of the income called a discretionary fund. It is assumed that the normal level of life occurs when satisfying the basic needs does not exceed 80% of income. The remaining 20% is the discretionary fund (Zalega, 2007).

In the developed, stable economy, people get used to life at a constant level, and they estimate the situation of their own entity based on their past experience and level of prosperity around them. In the developing economy, however, households are willing to accept restrictions on their consumer choices, but usually on the condition that their standard of living increases (Dietsch, 2005).

From the point of the presented considerations it is important to take into account the issue of cyclicality of obtaining income (regular and irregular), its nature (monetary and non-monetary) and the ways of allocating it (for meeting immediate needs or savings) (Smeeding, Weinberg, 2001).) A substantial part of regular income is spent on satisfying basic household's needs, while irregular income, in stable economic conditions, is used to meet the higher-level needs of households. Non-monetary household income additionally raises the standard of living of the entity. When it comes to income distribution into consumer spending and savings, then allocating a bigger part of income in savings can mean a lower level of satisfying current needs and vice versa. Household's savings, which are well-made and designed to achieve a particular goal may improve the standard of living of the entity in the future in general or with regard to specific groups of needs (e.g. saving for a house leading to its purchase will improve the degree of satisfying the housing needs of the household). However, not all savings need to transform into specific resources for satisfying the needs of the household. Some of them may simply be wasted or diverted for purposes other than the satisfaction of its needs. Therefore, this can lead to a conflict of interest in the household connected with the division of income, namely what proportion of income is to be spent on satisfying current

needs and what proportion is to be devoted to savings that will address the future needs of the household or needs unrelated with a given entity. They depend, *inter alia*, on households' expectations with respect to the future of own entity (Dumicic, Cibaric, 2010). The effect of savings is mainly visible in satisfying the higher-level needs, because this income is rarely, actually only in emergency situations, used to satisfy the basic needs. In general, 'the time delayed' income, that is savings, and also loans determine to a great extent the purchasing power of the household. However, they operate in two opposing directions. Loans, through the purchase of consumer goods, allow to satisfy multiple needs in a relatively short period of time. Though, due to the necessity to repay them with interest, they reduce the purchasing power of the household in the future. The savings, on the other hand, deplete the current fund, while increasing the household future purchasing power. In other words, savings delay the satisfaction of consumer needs in time, whereas loans accelerate them. In a politically and socially stable economy institutional savings increase and it is usually an expression of positive changes in the standard of living of country's population.

Income and other material resources of the household co-determine the level of its wealth. Broadly speaking, this level affects the needs system in the household and the general directions of the income distribution.

The household assets, defined as property and monetary assets, are one of the conditions for the functioning of this entity on the market (Mruk, 1984). Assets are understood as a resource of durable goods as well as financial assets and intangible assets (including, e.g. securities or legal assets) at the disposal of the household (Bywalec, 2010). The quantity and quality of the owned and used resources of households are most often the result of expenses incurred in prior periods. This stems from other factors, including the amount of resources received, inherited from other households, e.g. parents' households (Spilerman, Wolff, 2012).

One of the most important elements of the household assets is a house or a flat, which usually constitutes the highest value in the asset portfolio of the family. An own house is a major tool in collecting other items of the household's effects. It also determines the ability to carry out the basic functions of the household (Arrondel, Lefebvre, 2001).

Household assets influence consumption and the household's standard of living in two ways. Firstly, part of the assets directly satisfies the needs of selected groups, e.g. in the field of material development, housing, culture and recreation. Secondly, many assets (e.g. land, house) can be converted into cash and allocated

to satisfy specific needs (Bywalec, 2010). Hence they constitute a form of protection against the consequences of lowering the household's standard of living due to e.g. a job loss by one of its members. Depending on the level of wealth of a discussed entity there are different ways of managing the monetary budget, associated with the further accumulation of wealth. In low affluent households, the increase in assets can be achieved at the expense of lowering expenditure on the purchase of essential goods such as foodstuffs and clothing, while in highly affluent households the increase in assets typically leads to the purchase of complementary goods, and sometimes even a change in lifestyle. Material resources of households can have an impact on the status of intangible assets, such as: knowledge (through educational expenditure) and leisure time (Vogel, 2003).

Another economic factor is the leisure time. This is the time remaining for the members of the household after completing their professional, home and family duties, and after satisfying the physiological needs. Leisure can be freely disposed (Strzeminska, 1988). When considering the impact of leisure on the household's standard of living, two main issues have to be considered. The first one relates to the understanding of leisure as good in itself, whose 'ownership' improves the degree of satisfaction of selected needs e.g. cultural, recreational, sports and education. The second issue relates to the understanding of leisure as a kind of a 'substitute' of income. Since leisure time can be devoted to work and then it 'turns into' income that can be spent on improving the household's standard of living. Leisure can also be converted to time of work in own household. Then it increases the size of non-market consumption, which also raises the degree of satisfaction of the needs of the household. This is especially true in low affluent households. Therefore, it can be concluded that it is a so-called 'compensatory measure of the standard of living' of households (Folbre, 2009).

A very important issue is the way of leisure time management which depends both on its size and income that the household has (Mattingly, Bianchi, 2003). Leisure time can be spent both on satisfying basic needs, e.g. recuperation through passive recreation, as well as higher needs, e.g. human development through the participation in culture.

It should be emphasized that the leisure time is largely spent on consumption and influences it in a similar way as income – the more of it, the greater can the consumption be and the higher degree of satisfaction of household needs is. From a certain, high level of household effects, the increase in leisure resources becomes downright prerequisite of the development of consumption and improve-

ment of the standard of living. Indeed, time is required to be able to use the goods and services purchased on the market. Similarly, the shortage of free time can become a barrier to the development of households, as to the standard of living could grow, a household needs to use the discretionary fund, both in case of income and leisure (Bywalec, 2010). It is more often stressed that the barrier to the development of consumption is the lack of time to meet the needs, especially those of a higher level. In this context, the issue of an adequate supply of time-saving goods (i.e. increasing the resources of leisure time, e.g. a car) and time-consuming (i.e. aimed at increasing resources of leisure time, e.g. a game console) is also important (Greenwood, Seshadri, Youkoglu, 2005).

5.4. Conclusions

The standard of living of households is the result of cumulative, comprehensive impact of many different conditions and factors, among which there are cause-effect relationships. These links can be direct or indirect. Among them, there are various delays, multiplier effects, as well as substitution, complementarity, synergy and levelling phenomena. They always operate as a set of variable determinants as to the strength and direction of impact on the quality of life. Therefore, it needs to be kept in mind that the set of economic factors presented in this chapter and its impact on the standards of living 'runs' somehow through a filter of non-economic factors, which in specific cases become either a growth stimulator or a generator of reductions in the degree of satisfying needs. It is also worth noting that the above described factors affect the standard of living in an objective manner, and, besides the objective variables, the degree of satisfaction of household consumer needs is also influenced by subjective factors. They are connected with the particular characteristics of individual members of households and these are, e.g. habits, customs, motives, attitudes. They modify the reactions of individuals to the impact of objective factors.

VI

SŁAWOMIR KOTYLAK - ADRIANA MENDIA - ANTONIO QUEIMAÑO

THE IMPORTANCE OF WINE PRODUCERS FOR THE CCI SECTOR IN SPAIN AND POLAND ON THE EXAMPLE OF SELECTED AREAS - COMPARATIVE ANALYSIS

6.1. Introduction

The concept of Creative and Cultural Industry (CCI) refers to a range of business activity related to areas involving generation or implementation of knowledge and information. Depending on the local context, the concept may be referred to as cultural industry or creative economy. It is observed that creative industry has become increasingly more important for economy well-being, and its spokesmen suggest that "human creativity is the ultimate economic resource' and that "the industries of the twenty-first century will depend increasingly on the generation of knowledge through creativity and innovation'. Various commentators offer suggestions concerning what activities the concept of creative industry should include, and the very label itself has become a subject of debate - with significant differences or overlaps between the terms "creative industry", "cultural industry" and "creative economy".

The aim of the paper is comparative analysis The importance of wine producers for the CCI sector in Spain and Poland on the example of selected areas. For the purposes of the study such research approaches were applied as: functional approach, methodology of the functional analysis, comparative analysis, expert approach, benchmarking. These approaches to a greater extent based on research literature, and to a lesser extent diagnostic testing (assessment of the facts), binding them then with the creation of models and patterns.

6.2. Character of the Cultural and Creative Industries (CCI)

The term cultural industry refers to industries which combine the creation, production and commercialization of creative contents which are intangible and cultural in nature. The contents are typically protected by copyright and they can take the form of a good or a service.

Cultural industries generally include printing, publishing and multimedia, audiovisual, phonographic and cinematographic productions as well as crafts and design. The term creative industries encompasses a broader range of activities which include the cultural industries plus all cultural or artistic production, whether live or produced as an individual unit.

The creative industries are those in which the product or service contains a substantial element of artistic or creative endeavor and include activities such as architecture and advertising.

Table 6.1. Classification of creative industries

No.	Name of industry	Included sectors
1.	Cultural sites	archaeological sites, museums, libraries, exhibitions
2.	Traditional Cultural Expressions	arts and crafts, festivals and celebrations
3.	Performing Arts	live music, theater, dance, opera, circus
4.	Visual arts	painting, sculpture, photography and antiques
5.	Edit and print media	books, newspapers and other publications
6.	Audiovisual:	film, television, radio and other broadcasts
7.	Design	interior, graphic, fashion, jewelry and toys
8.	New Media	software, games console, digitized creative content
9.	Creative Services	architectural, advertising, R & D creative, cultural and recreational

Source: Classification according to United Nations. UN Report (2010).

6.3. World wine sector

The international wine industry has been characterized by the existence of a group of dominant countries that account for most of the global wine industry: Spain, France and Italy. This group of countries leading vineyards cultivated surface, grape production and winemaking. But the last few decades, have appeared on the scene a number of emerging countries (USA, China, Australia, Argentina, etc.) that gradually have been consolidated in this sector reducing the weight of the countries of the old continent. The aim of this project is to explain a global vision of the wine sector and then focus on the particular case of Spain.

Spain is one of the largest wine producers in the world, first in the ranking for plantings, first by producing wine and grape juice in the 2013/2014 campaign, ahead of Italy and France and leading exporter in terms of volume in the year to September 2014, although third in terms of value. Because of its importance in

economic terms, but also social and environmental, as well as the importance of wine as an image of the country abroad, the sector is extraordinary relevance in Spain.[8]

Table 6.2. Top fifteen wine producing countries*

Country	2012	2013	2014
France	41,548	42,004	46,698
Italy	45,616	52,029	44,739
Spain	31,123	45,650	41,620
United States	21,650	23,590	22,300
Argentina	11,778	14,984	15,197
Australia	12,260	12,500	12,000
South Africa	10,569	10,982	11,316
China	13,511	11,780	11,178
Chile	12,554	12,820	10,500
Germany	9,012	8,409	9,334
Portugal	6,308	6,237	6,195
Russia	6,400	6,200	6,000
Romania	3,311	5,113	4,093
New Zealand	1,940	2,484	3,204
Greece	3,115	3,343	2,900
Rest of World	27,194	31,777	31,526
World	257,889	291,902	278,800

* - Volume in thousands of hectolitres

Source: http://italianwinecentral.com/top-fifteen-wine-producing-countries-2014/

Denominacón de origen is part of a regulatory classification system primarily for Spanish wines (similar to the French appellations) but also for other foodstuffs like cheeses, condiments, honey and meats, among many.

In compliance with European Commission Regulation (CE) 753/2002, Spanish wines are classified into two categories, which in turn are further classified into sub-categories depending on the strictness of the criteria applied in producing the type of wine in question:

1) Quality Wines Produced in a Specified Region (QWPSR)
   a) Vino de Pago (VP, formerly also DO de Pago): these wine regions aspire to the very highest standards with extremely strict geographical criteria, centering on individual single-estates with an international reputation. There are currently 14 estates with this status.

[8] http://www.oiv.int

b) Denominación de Origen Calificada (DOCa) (Denominació d'Origen Qualificada (DOQ) in Catalan): regions with a proven track record of consistent quality. There are only two wine regions with this status: Rioja and Priorat.

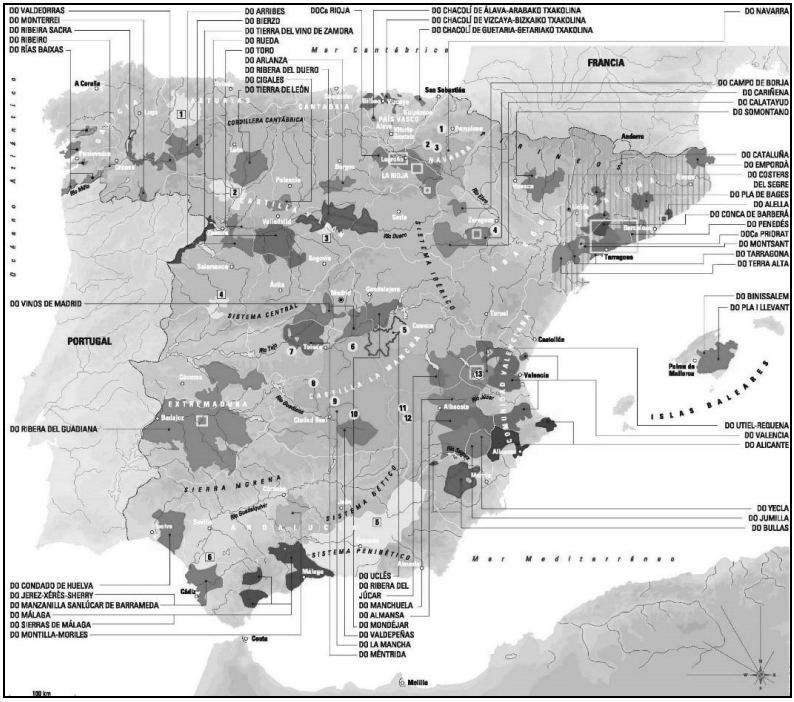


Figure 6.1. Denominación de Origen
Source: https://www.vinetur.com/documentos/dovinos/

2) Table wine
   a) Vino de la Tierra (VdlT) "Country wines" which do not have EU QWPSR status but which may use a regional name. There are currently 46 Vino de la Tierra regions in Spain.
   b) Vino de Mesa (Table Wine) is bulk-grown, usually drawn from a wide variety of regions and hence has no vintage or area designation on the label, apart from "Produce of Spain". Production of this low grade of Spanish wine is falling year on year.

6.4. Wine sector in Spain

The Spanish wine sector is of great importance both for the economic value generated, for the population occupies and the role it plays in environmental conservation.

a) Spanish production

After seven seasons of relative stability, hovering volume production of wine and grape must in around 40 million hectolitres, in the 2013/2014 campaign and according to data from the Spanish Fund Payment Agency (FEGA)[9], production exceeded 52 million hectolitres, up from 34.2 million the campaign 2012/13, representing a significant increase of 53.7% (+18.4 million hl), and the highest figure historically. It agrees also that last season was particularly low. As for the 2014/2015 campaign, the latest forecast of Ministry of Agriculture, Food and Environment (MAGRAMA[10]), with data to October 2014 speaks of 41.3 million hectolitres of wine and must produce, implying a drop from the 2013/14 campaign -22.8%, exceptionally high. The largest decline would be recorded in Castilla-La Mancha, which would rise from 33 million hectolitres produced in the 2013/2014 season to 22.7 million in the campaign 2014/2015.

b) Corporate structure

The Spanish wine sector is undergoing a major renovation and renewal process. Since 2000, the area under conversion and restructuring has exceeded 130.000 hectares, representing an investment of 800 million euros. It is estimated that more than 4.000 wineries in Spain produce still wines, sparkling wines and liquor. They are, usually, small and its capital is mostly of Spanish origin, familial, while that many are constituted as agricultural cooperatives.

Small wineries and cooperatives coexist with these big companies, which possess centres of production in different areas in order to diversify its offer. In order to control quality throughout the production process, some wineries have purchased or increased the extent of its vineyards, although most of the supply of wineries in Spain comes from other winemakers or directly cooperatives in the form of wine. Also important is the level of investment that has been intended for the construction of new wineries, improving facilities and equipment and use of different aging techniques to offer a much broader range of quality wines, although this level of investment has been greatly reduced in recent years of economic crisis. In this context it is interesting to note the activity and innovation of many wineries that

[9] http://www.fega.es
[10] http://www.magrama.gob.es/es

experience with new grape varieties and the use of native grapes to produce wines more adapted to new consumer tastes.

DOCa Rioja has registered the highest number of quality wine cellars (826), followed by DO Cava (419), Ribera del Duero (286), DO La Mancha (256), DO Catalonia (203), DO Penedes (187) and DO Rias Baixas (181)[11].

This modernization process extends even to the construction of new wineries charge to world-famous architects, who have undertaken some wineries, among which, in Rioja, the new Domecq winery, Bodegas Ysios (commissioned to Santiago Calatrava), or CVNE (designed by Philippe Mazières).

The sector shows enormous dynamism. The degree of concentration is relatively high, estimated the first five groups a combined share of almost 28% of the market for themselves.[12] Penetration foreign capital among the top operators is not very important, although they are spreading agreements with companies in other countries to improve the marketing skills world, as well as increased partnerships between marketers to jointly address her strong internationalization process that is getting the Spanish wine industry.

Among the major companies, with more than 100 million euros in turnover, they are the following: Freixenet, J. García Carrión, Codorniu, Wine Arco Invest Group, Domecq Wineries Group, Miguel Torres group, Felix Solis, Avantis and Faustino Group.

c) Export

World trade in the wine sector are becoming increasingly important. A total of 72.2 million hectolitres on average in the five years 2001-05, has spent 100.7 million hectolitres in the year to September 2014. In terms of value, the total value of exports of wine and must have achieved in the year to September 2014 the number of 25.623 million[13]. This market World, considered by the OIV as the sum of exports of all countries, has fallen in the year to September 2014 compared to the same period of 2013 in terms of value, assuming -1.3% less. However, the volume has increased slightly, by 0.8% in the same period, to 100.7 million hectolitres.

Spain is the main world supplier of wine in terms of volume and third in terms of value, with 21.7 million hectolitres and 2,524 million respectively. The average price of Spanish wine abroad was fixed at 1.16 euros per litre, with decrease

[11] http://www.oemv.es/esp/principales-datos-del-sector-del-vino-en-espana-1333k.php
[12] http://www.ivap.euskadi.eus/contenidos/boletin_revista/sustrai_92/es_dapa/adjuntos/92_26_27_c.pdf
[13] http://www.eleconomista.es/empresas-finanzas/noticias/6481452/02/15/Espana-supera-a-Italia-como-lider-mundial-en-la-exportacion-de-vino-por-el-bajo-precio.html

of -18.9%, due to increased exports of bulk wine, with lower added value. It remains much lower than other major supplying countries, whose average is 2.47 euros per litre.

Spain is followed by Italy as the second largest supplier by volume, with 20.4 million hectolitres sold in the year to September 2014. However, France is again the main exporter in value clearly, with 7.673 million euros in turnover, followed distantly by 5.087 million admitted for Italy. France is still, with 14.5 million hectolitres, far from Italy and Spain in volume, indicating a much higher average selling price for the Gallic country. Interanual to September 2014 stood at 5.30 euros per litre, and was clearly the highest among the twelve major global suppliers. The difference is even greater when compared with the average prices of its main competitors, Italy (2.50 € / l.) and Spain (1.16 € / l.)[14].

6.5. CCI in concrete regions of Spain

Basque Country - The Basque Country, an Autonomous Community in northern Spain, is divided into three provinces - Álava, Guipuzcoa and Vizcaya. It sits on the extreme western end of Spain's border with France, where the Pyrenees Mountains lie, and has hundreds of miles of coastline on the Bay of Biscay. The Basque people are proudly independent, having their own culture and unique language. Although in the last few decades, the Pais Vasco, as it is called in Spanish has become famous for its cuisine; its wine is still relatively unknown.

Wine-making is nothing new to the Basques. Like many parts of Spain, vineyards in the Basque Country have been tended since the Iberian Peninsula was part of the Roman Empire. It seems only appropriate that most of the wines produced in the region are light, fresh and white wines. There are currently two Denominaciones de Origen or DOs.

[14] http://economia.elpais.com/economia/2015/04/05/actualidad/1428257646_470200.html

Rioja Alavesa - This area is a sub-area of the famous Rioja wine region, and accounts for about 21% of the area of the Rioja Qualified DO. It is located in the southern tip of the Basque Country, along the French Route of the Camino de Santiago. According to the "Guide to Basque Cuisine", published by the Basque Government, Rioja Alavesa influenced and even promoted wine production throughout the ages, because religious orders located there promoted the art of wine-making.

There are 125 bodegas or wine producers in the Rioja Alavesa DO that belong to AWRA (Association of Wineries of the Rioja Alavesa), founded in 1990. Those wineries produce over 30 million litters of wine annually.

The Txakoli Dos - Txakoli is a wine produced near the Basque coast. Vineyards in this area are located above the sea in a mild coastal climate. *Txakoli* is a young, year-old wine that has been made in the Basque Country for many centuries. It is generally light, fruity and slightly sparkling, with a green tint, high acidity and low alcohol content. Because it is a light white wine, it is often paired with fresh fish and seafood from the region. Currently about 3.5 million bottles are produced each year.

6.6. Comparison with France

The words wine and France go together. The tradition defines this country, its strains and winemaking methods have created school in the world. France has an advantage that other countries do not: their geographic and climatic diversity. These features allow to elaborate personality from light whites to reds inimitable silky and aromatically. Each region has its typical French wines in close relationship with the local cuisine.

Spain is the world's pool of bulk wine. Last year was exported, 22.3% more wine than the previous year-what made Spain the world's largest exporter. Although a 3.2% income less, and the average price per litter fell by 20.6%. In 2014, Spain exported at the price of 1.11 euros per litter compared with 5.37 in France.

Three quarters of the wine that Spain produces are exported to France, Germany, Portugal and Italy. The Spanish do a lot of wine and very good, but they sell at the price of bad wine. That wine can market after France and Italy at a much higher price. The lack of good commercial and distribution networks, too abundant harvests and selection of buyers' unprofitable countries are part of the explanation.

Spanish un-bottled wines are dispensed to bars, supermarkets and liquor manufacturers of half the world. A part of Spanish wine that travels to France is re-

exported as Spanish wine or mixes it with French wine. In addition, France sells the Spanish wine two or three times more expensive than it sells Spain.

The wines of La Mancha are associated with large quantity and low quality. There are Spanish wines that are comparable to the best in France, but it takes time and strong campaigns Administration.

6.7. CCI meetings and cooperation with Portugal and Argentina

Atlantic Cultural Industries Market - Market Atlantic Cultural Industries, to be held in Santiago de Compostela (Galicia, Spain), is the first meeting between Argentine businessmen, Spanish and Portuguese through Galicia, with the aim of developing industries Cultural separated by the ocean but united by a common history capable of contributing to growth exchange their cultural goods and services areas.

This initiative aims to consolidate a future together enhancing identities and creating own circulation circuits with Galicia, as a gateway to channel this exchange in the Latin American context.

The strengthening of interregional link from cultural industries allow thinking and update an agenda of integration and cultural cooperation at the national and international levels. What will be the dynamics of MICAtlántica?

In the market, entrepreneurs, institutions, producers, artists and SMEs will encounter transatlantic open new opportunities for linking trade and peers through business rounds, conferences, debates and performances live.[15]

Agadic (Galician Agency of Cultural Industry) - Agadic began his career in 2008 as an autonomous public agency attached to the Department of Culture of the Xunta de Galicia. According until assigned to his law of creation (4/2008 of May 23), aims to push and consolidation of the business fabric in the cultural sector galician.

His responsibilities extend to all the cultural and artistic activities developed by individual developers and businesses looking for a dynamic cultural industry, competitive and innovative. In this sense, carries out various lines of work aimed at providing greater stability to the sector, optimize business management processes of production and distribution, boosting the internal market and promote the external projection of the Galician culture.[16]

[15] http://www.cidadedacultura.gal/es/evento/mercado-de-industrias-culturales-atlanticas
[16] http://www.agadic.info/agadic

Fair Cultural Industries - The director of Agadic, Jacobo Sutil, and the president of the Association Culturgal Manuel Bragado, today signed the City of Culture of Galicia in Santiago de Compostela, a collaboration agreement by approaching 50,000 euros for the conduct of joint activities under the next eighth edition of Cultural Industries.

The two entities this way assume the commitment to establishing initiatives that strengthen the cultural action that unfolds in India, combining the professional encounter with the presentation, promotion and sale of cultural goods and services, thus catering to the promotion of cultural products demand in Galician society.[17]

Route of the wines of Galicia and northern Portugal - In order to promote and strengthen the important wine market in Galicia Interior recently created the so-called wine route of Galicia and Portugal.

The Society of Image and tourism in Galicia Turgalicia in international cooperation with our Portuguese neighbours, is working on the implementation of certain routes related interesting wine world, so that with the already operational Wine Route of Ribeiro will complete the promotion and dissemination of this important sector of our economy.

The promotion of so-called wine, through the creation and diffusion of innovative products in addition to other important factors, constitutes a major point of attraction of the tourist visitor, which represents a significant increase in the value of demand.

The beautiful landscape that is based on the vineyard, its culture, architecture, both civil and religious, that adds to the history and tradition, not to mention the important contribution its attractive cuisine, are sufficient guarantee to raise the economic momentum of each zone.[18]

6.8. Importance of wine producers for the CCI sector in Poland

The present situation on the Polish wine market as well as forecasts concerning it is optimistic. Although we are still far from the traditional wine countries and generally wealthier states, the growing awareness among consumers is pleasing. Presently grape wine consumption in Poland, including fruit wines, is 7.1 litres per

[17] http://www.agadic.info/Blog/contido/1991/A_Agadic_e_a_Asociacion_Culturgal_asinan_un_convenio_para_a_realizacion_de_actividades_na_8__Feira_das_Industrias_Culturais
[18] http://www.laregion.es/opinion/juan-andres-hervella/ruta-vinos-galicia-norte-portugal/20090708000000246321.html

person a year (data: Euromonitor International). According to experts, we will be able to talk about the market saturation only then, when the consumption reaches 20 litres per person, but this will take us a lot of time. Growth in wine consumption is associated with a society's affluence and in case of Poland it is a factor hampering development. Nevertheless it should be emphasised here that Poles are willing to buy wine. Table wine sale.

Wines have been present on the Polish tables for years. Their popularity, range of available products and Poles' knowledge about their consumption are changing however. Poles best know the brands, which have been on the market for many years. Sophia (such as Domain Menada, Jantoń and Vinex Slavyantsi) and Carlo Rossi (Bols Sp. z o.o., owned by CEDC Group) are the brands that are most popular among dry wines. Sophia is still the most recognizable brand according to another round of polls serially conducted by CBM Indicator. This brand still remains the most popular and this is unquestionably thanks to the affordable price and availability on the market for decades. The Sophia brand was picked by 22% of respondents in the spontaneous brand knowledge test and by every second person in the knowledge test. For the first time, brand other than Sophia, namely Carlo Rossi, had gained a bit higher level of spontaneous recognisability in the CBM Indicator polls; in the previous polls we emphasized the growing and more significant percentage of people mentioning these Californian wines. Let us remind here that few years ago the knowledge of this brand among Poles did not exceed the perception threshold. The Carlo Rossi products certainly belong to a bit more expensive and a bit more sophisticated than the generally available and the cheapest Sophia brand products. Are these results showing the slowly developing wine taste and sophistication among the Polish society? There is a considerable group of Poles with sophisticated wine tastes for sure, but it is still difficult to talk about general trends.

Table 6.3. wine is one of the categories that show both the growth in value and volume (organic) desired by producers and distributors. In the annual period (August 2009 - July 2010) analysed by ACNielsen, Polish retail shops had sold 54.5 million litres of table wines, what makes up 3.6% of growth in relation to the analogous period a year earlier and put this category on the 5th place in the ranking according to sale percentage change of alcohol categories. The annual table wine sale in value had increased as much as a billion zlotys and the revenue had amounted to 1 billion 52 million zlotys, what means 9.1% growth in relation to the August 2008 - July 2009 period.

Table 6.3. Sale volume and value in 2009 and 2010 in Poland

Category/Segment	Sale volume in 1.000 liters Quantity		Change (%/p%)	Sale value in 10 000 PLN Value		Change (%/p%)
	August'08 -July'09	August'09 -July'10		August'08 -July'09	August'09 -July'10	
Table wines	52 642,9	54 533,6	3,6	96 385,3	105 189,6	9,1
Dry Table Wines	29,2	31,3	2,0	33,8	34,7	0,9
Semi-dry Table Wines	28,5	27,7	-0,9	28,6	28,1	-0,5
Semi-Sweet Table Wines	35,4	34,1	-1,3	30,3	29,7	-0,6
Sweet Table Wines	5,5	5,5	-0,1	6,0	6,1	0,1
Other	1,3	1,5	0,2	1,3	1,4	0,1
- Red	66,3	64,7	-1,7	65,3	64,0	-1,3
- White	27,1	27,7	0,6	27,0	27,4	0,4
- Pink	6,5	7,5	1,1	7,6	8,5	0,9
- Other	0,1	0,1	0,0	0,1	0,1	0,0

Source: (Nielsen, 2015).

The wine producers are capable of producing only a small volume of wine that doesn't even make it to the shops. Such small-scale alcohol production encounters numerous legal and tax barriers overcoming which begins to pay off once a plant grows to be a big distillery or a brewery producing thousands of beer bottles daily. Polish wine producers —mainly hobbyists — don't have it easy.

Despite the barriers, though, the wine industry in the warmest regions of Poland, such as the Lubuskie voivodship, or parts of the Podkarpackie voivodship, continues to grow, and wine producers –now associated in a cluster - have not ceased to struggle with the unfavourable reality and continue to develop their production.

Zielona Góra – Zielona Góra is known for the tradition of wine production and grapes have been cultivated locally for many centuries. This tradition is revived annually during *the Wine Festival*. Despite unfavorable climate, local wineries produce wine which has a distinctive, unique flavor. Tourists can visit the only Museum of Wine in Poland or enjoy a walk up the Wine Hill, located in the city center and covered with vineyards, with a beautiful Palm House restaurant situated on its top.

Zielona Góra for centuries has been known for its wines. The vineyards are cultivated here since the Middle Ages. Therefore, the wine traditions of this part of Europe are gathered and presented in the Wine Museum, which promotes tourism and cultural development. One of the highlights of his collection is a valuable set of glasses and decanters. While at the Museum Winemakers meetings and tastings are also organized. During the communist era wine production it was reduced but, since 1990, is recovering. The wine is mixed perfectly with the landscape of this city as Zielona Góra (Green Mountain) actually teeming with vegetation.

Every year since 1862, is held in September a Wine Fair, taking advantage of the vintage. A large icon of the city is Bacchus, the Roman god of wine. *Bachusiki* are small figurines representing children of Bacchus, set in different parts of the city. They are one of the main tourist products of Zielona Góra and promote its wine tradition.

6.9. Conclusions

The wine sector in Spain has made a real revolution in production in the last two decades. The result has been an explosion of excellent wine and competitive throughout the Spanish geography. While there is still room for further improving the agronomic and technological side, the big challenge is to improve the profitability of the wine business. It is a difficult task, because in traditional markets and consumption is declining in the world, competition is very intense. It is the best opportunity the sector has, for over a century, to become a world leader, as Spain is probably the country with the greatest development potential. To overcome this challenge, the actors of the grape and wine must assume a greater role and make a huge effort in terms of quality and innovation, as the new regulation is less interventionist wine and Spanish products still suffer exceptions, lack of prestige.

VII

EWA KULIŃSKA

- MONIKA ODLANICKA–POCZOBUTT - KATARZYNA WARZECHA

ANALYSIS OF THE METHOD USED FOR MEASURING EFFECTIVENESS OF THE COURTS IN POLAND ACCORDING TO TYPE OF CASES

7.1. Introduction

A main problem of the Polish judiciary is the excessive length of the proceedings - some procedures in complicated cases last more than 10 years. This is evidenced by, among others, numerous judgments of the European Court of Human Rights. The proposed changes, although they are a step in the right direction, seem to be insufficient. They do not include the fact that the excessive length of proceedings may have a multi-instance character, and may correspond to the various authorities and courts.

The reasons of the search of solutions in the common judiciary in area of performance measurement is the accession of Poland to the European Union, the necessity to conform to the European procedures and the pressure to reduce the prolixity of the Polish justice in terms of dealing with cases.

In the literature, in which the problem of the examination of the functioning of organizations is discussed, there is no agreement to what are the essential criteria of performance (Cameron, 1981; Lewin, Minton, 1986), understood often as productivity (Kosieradzka, 2012). The examination should include the organizational activity in relation to numerous criteria, however, the performance of an organization is frequently only perceived as its effectiveness (Cameron, 1986; Hitt, 1988).

The management of contemporary organizations based on the paradigm of a constructive unity of theory and practice is clearly connected with the functioning of the organization in the environment (Drucker, 2000). Performance measurement is influenced by the organizational structures, which are undergoing evolution from functional ones, characteristic of the classic approach, to the process structures (Grajewski, 2003, 2007).

The purpose of the article was an analysis of the applied method used for measuring effectiveness of the common courts in Poland in relation to the identified faultiness in the performance measurement.

7.2. The courts of appeals, territorial and district courts in Poland in total and their effectiveness in the years 2002-2014

In Poland, the courts are divided into courts: appellate, territorial and district. There appear also significant differences in terms of the quality of particular appeals, in districts and territories, not only in the respect of the areas of their properties, but also in terms of the number of inflowing cases, and the size of the court units.

Now there is 11 courts of appeal, 45 territorial and 321 district courts as the consequence of this state (*Analiza...*, 2010). The available statistics shows that in the case of courts of appeal the difference in the size between the largest and the smallest court is 3,5- fold, in territorial courts it is almost 18-fold, an in the district courts it is 34-fold.

The element of the reform of the Polish common judiciary - reorganization of courts - is a trial of balancing the networks of courts. The balance in the network can be assured when there are no major disproportions between the participating units. Because of the fact that an effective functioning of networks of courts meets an essential social need, it should be pointed out that the access to justice ought to be equal in every district of its activity. Such a presumption has become a base for a widely discussed administrative liquidation of small courts (Odlanicka-Poczobutt, 2013). The data collected by the Ministry of Justice (Petryna, 2012) and the analysis of the advantages and disadvantages of the organization of the common judiciary in Poland, presented in the report of the MCC group, (*Słabe...*,2012) points to the occurring disproportions, where the most serious problem was too small a number of the size of courts, which had a particularly bad influence on the efficiency of functioning of district courts.

In the courts are recorded fundamental issues of divisions: criminal, civil, labor law, social insurance and business law. As we can see from the data presented in Figure 7.1. the inflow of cases indicates that the vast majority of the inflow of cases concerns district courts (over 92%), and the remaining courts accept only 7% of cases (territorial courts), and the courts of appeal - 1%.

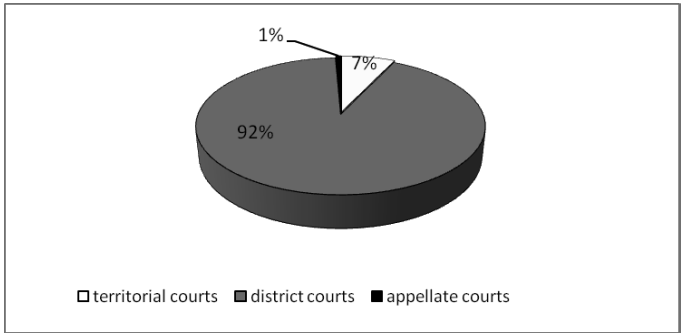


Figure 7.1. The number of pending cases (with remains from the previous period), and cases solved in the polish courts in 2014
Source: Own calculations based on (*Data...*, 2015).

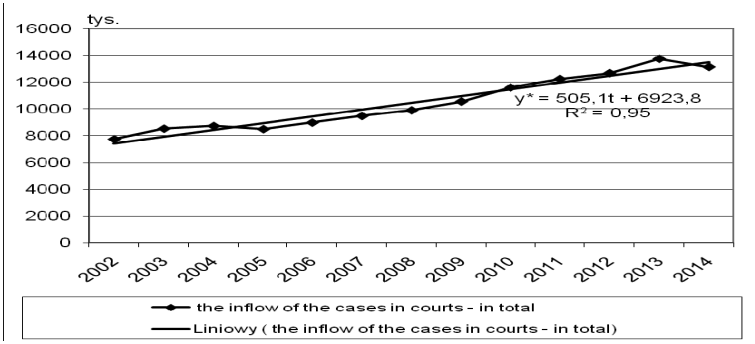


Figure 7.2. Inflow of pending cases in the polish courts in period 2002-14
Source: Own calculations based on (*Data...*, 2015).

The upward trend in the number of inflowing cases is clearly visible in the surveyed period 2002-2014 (as it is illustrated in Figure 7.2.), with the exception of 2014, where there was a slight decline. In the audited period from one year the number of pending cases increased an average of 505.1 thousand.

On the basis of the data contained in Figure 7.3. we can see that most civil cases had inflowed into courts, from year to year an average to 438 61,00, (the trend function y * = 438.61 t + 3428.7 R2 = 0.95), followed by criminal cases, on average every year 77.118,00 (the trend function y * = 77.12 t + 1942.5 R2 = 0.83).

Courts in Poland - in total - were pending in 2014 16,780,000 cases, including cases remaining for consideration from the previous year (which accounted for approximately 5% decline in the number of cases compared to the previous year

(2013)), of which 2,229,230 are cases remainder of 2013 (representing 13% of cases to settle).

The data contained in Figure 7.3. and 7.4. show that in 2014 the courts have had to settle most civil cases - 9,992,600 cases (of which not settled with 1,394,600 cases, which accounted for about 14% of civil cases to settle).

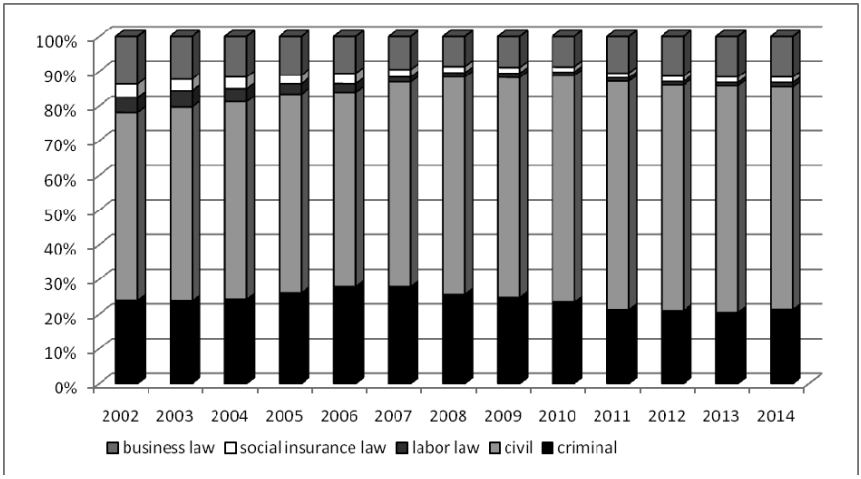


Figure 7.3. Cases inflowing to courts in total, according to the type of cases in the years 2002 to 2014 - in the interest
Source: Own calculations based on (*Data...*, 2015)

The dynamics of solving was lower than the growth of inflow, which manifests itself in the effects of an increase in the number of unresolved cases.

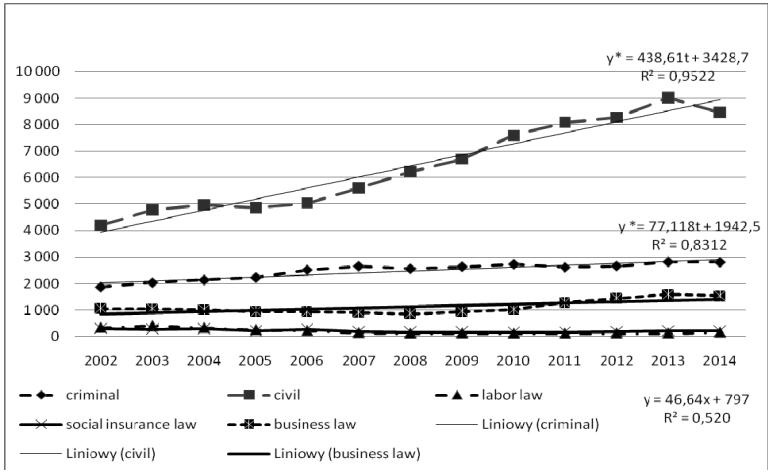


Figure 7.4. Number of pending cases (with remains from the previous period), and cases settled in the polish courts in 2014 - in total
Source: Own calculations based on (*Data...*, 2015.)

7.3. The key performance indicators in the Polish judiciary - The courts of appeals, territorial and district courts in Poland in total and their effectiveness in the years 2002-2014

In polish judiciary the basic indicators of judicial efficiency are:

- an indicator of inflow control (Ic),
- an indicator of residue (Ir).

The indicator of inflow control (Ic), which is a reference of settled cases to inflowing cases during the reporting period is shown in Figures 7.5-7.9, depending on the type of court and type of case.

Indicator of residues (Ir) - duration of the proceedings cases in total (in months) (see Figure 7.10-7.14) - is the average duration of proceedings of all cases in the next reporting period compared to the average monthly inflow of all cases in the reporting period.

The indicator of inflow control (for polish courts in total) in 2014 compared to 2013 has improved and amounted to 101.4. That means that settled an average of 101.4 cases per hundred inflowing into the court. In 2013, the indicator of inflow control reached 96.1.

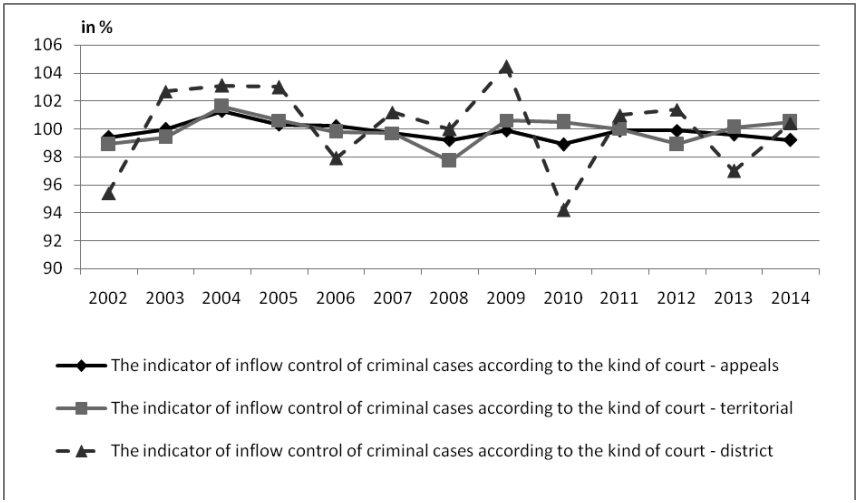


Figure 7.5. The indicator of inflow control of criminal cases according to the kind of court in the years 2002 to 2014
Source: Own calculations based on (*Data...*, 2015).

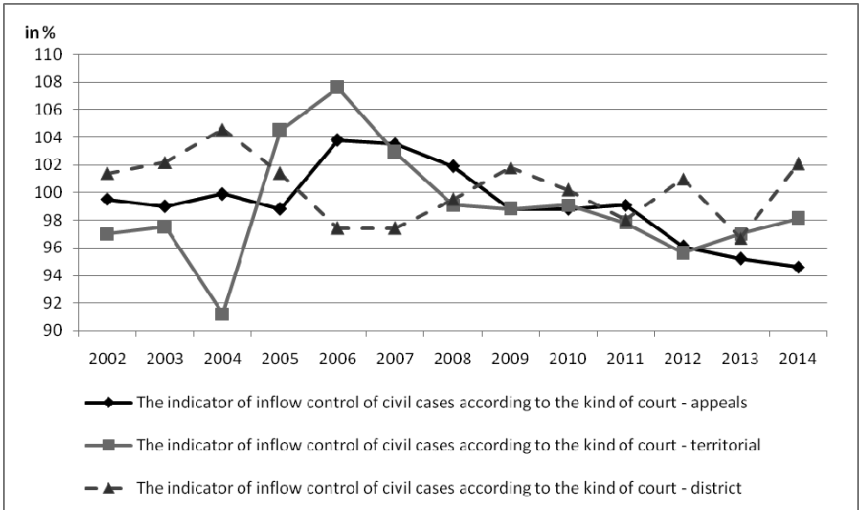


Figure 7.6. The indicator of inflow control of civil cases according to the kind of court in the years 2002 to 2014
Source: Own calculations based on (*Data...*, 2015).

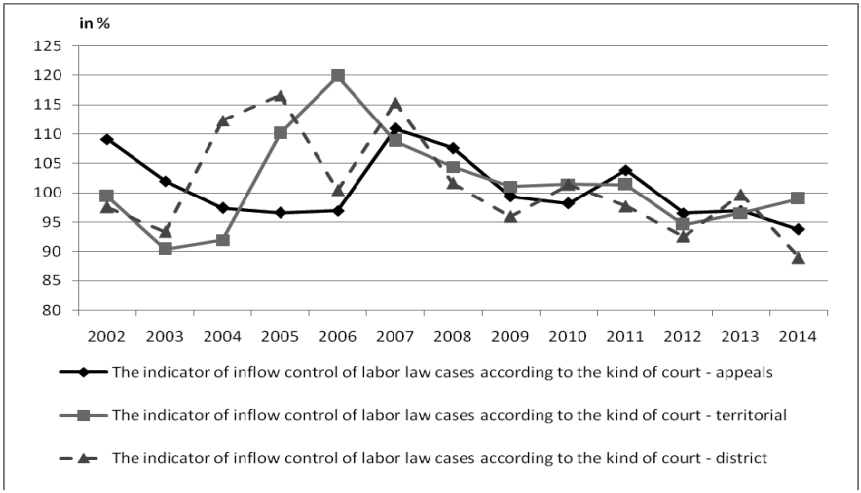


Figure 7.7. The indicator of inflow control of labor law cases according to the kind of court in the years 2002 to 2014
Source: Own calculations based on (*Data...*, 2015).

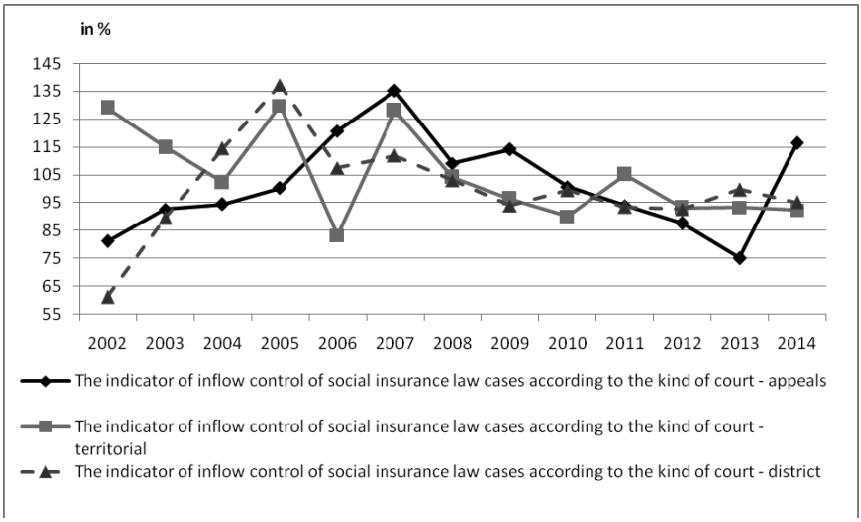


Figure 7.8. The indicator of inflow control of social insurance law cases according to the kind of court in the years 2002 to 2014
Source: Own calculations based on (*Data...*, 2015).

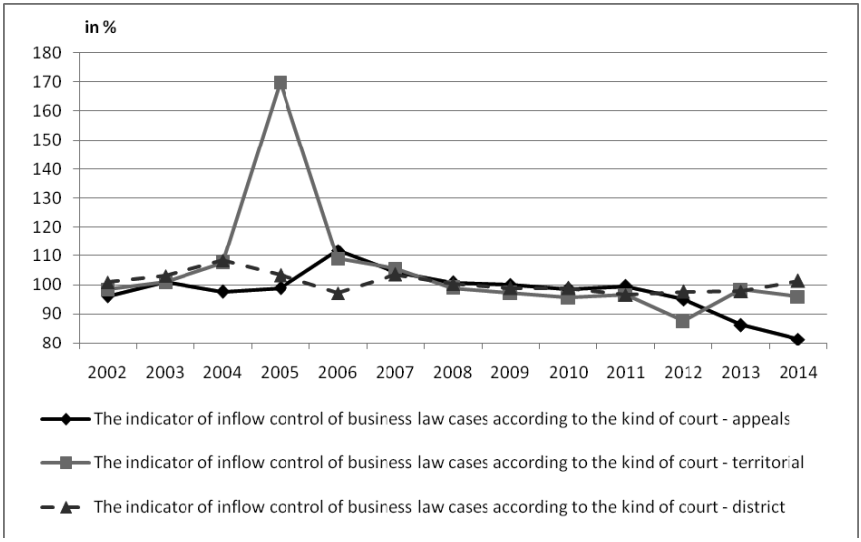


Figure 7.9. The indicator of inflow control of economic cases according to the kind of court in the years 2002 to 2014
Source: Own calculations based on (*Data...*, 2015).

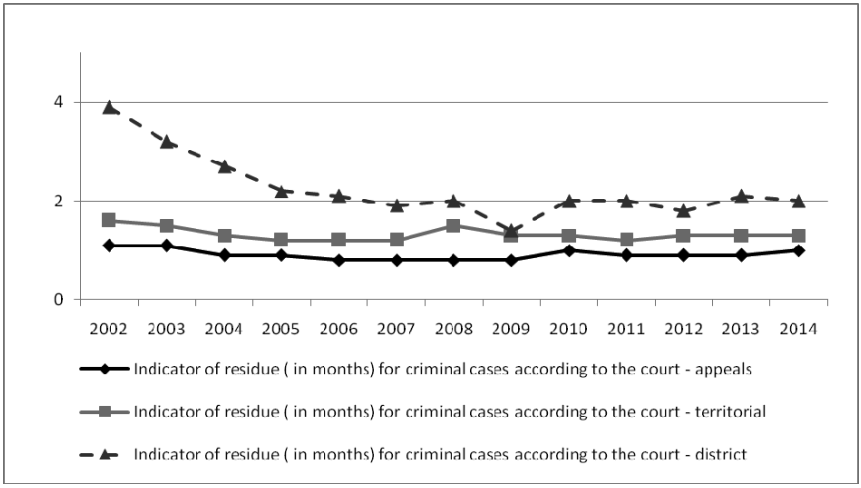


Figure 7.10. Indicator of residue (duration of the proceedings in months) for criminal cases according to the court in the years 2002-2014
Source: Own calculations based on (*Data...*, 2015).

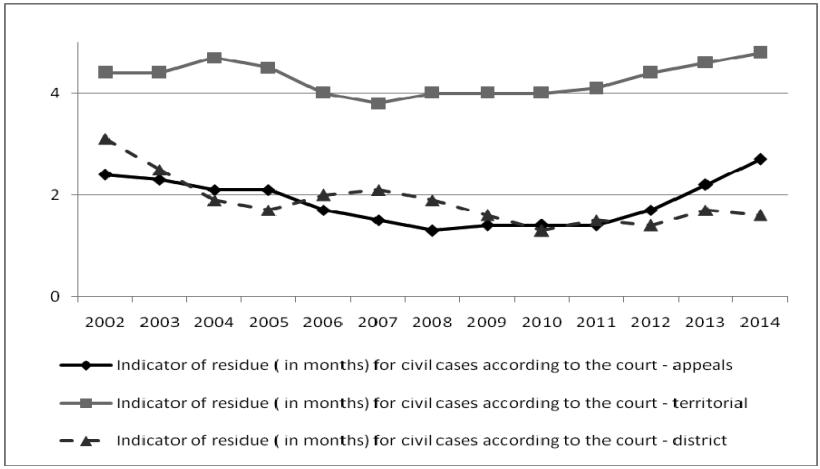


Figure 7.11. Indicator of residue (duration of the proceedings in months) for civil cases according to the court in the years 2002-2014
Source: Own calculations based on (*Data...*, 2015).

Figure 7.12. Indicator of residue (duration of the proceedings in months) for labor law cases according to the court in the years 2002-2014
Source: Own calculations based on (*Data...*, 2015).

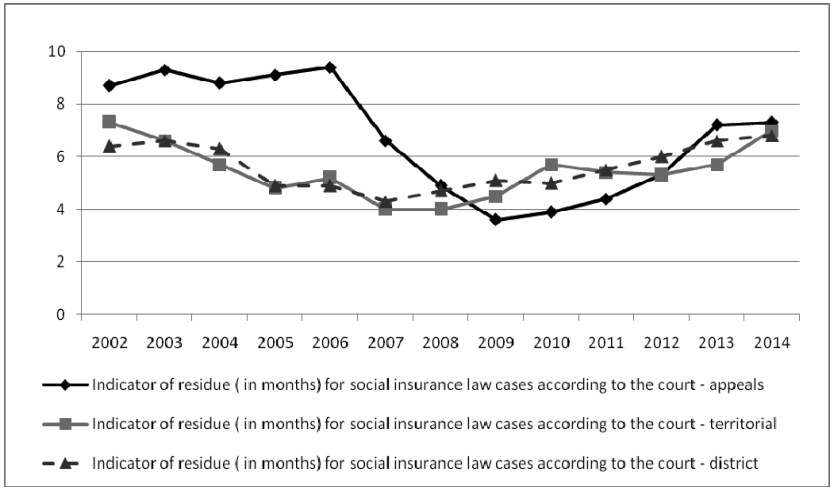


Figure 7.13. Indicator of residue (duration of the proceedings in months) for social insurance law cases according to the court in the years 2002-2014
Source: Own calculations based on (*Data...*, 2015).

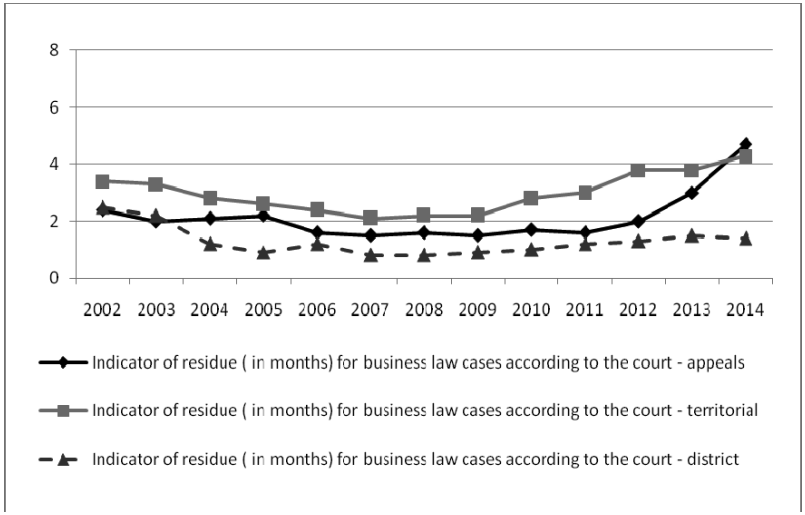


Figure 7.14. Indicator of residue (duration of the proceedings in months) for business law cases according to the court in the years 2002-2014
Source: Own calculations based on (*Data...*, 2015).

7.4. Disadvantages of the applied measurement system

The measurement system used in the polish judiciary provide information only about the present level of dealing with cases, and are not used in controlling or planning. The statistics describes a past performance, which allows for reacting only on the basis of historic presenting of the data. The indicators show solely what cases have been dealt with and on what date, but there does not exist an indicator defining which periods are connected with the prolixity (is it a remaining case from the year before, or from two or more years before) and what cases are presently in progress. The programs to increase productivity of courts have led to the fact that the output efficiency measures are very emphasized. This has further led to inappropriate measurement of output quantity and efficiency without understanding and analyzing the causal effects on other aspects of the organization's performance. The most serious disadvantage of the measurement system applied to the Polish common judiciary is the lack of taking into consideration the time of the realization of the processes.

The defective information that the measures give on process performance also makes it more difficult to comprehend the causal relationship between performance and measures. There is a clear need that this concept of quality is broadened to include the lead-time as a major and important aspect of quality and the recipient's satisfaction. A good suggestion to improve the process performance measurement system was formed on the basis of the findings in literature (Pekkanen, Niemi, 2012).

The only solution aiming at directing the measurement to the processes has been the measurement of the workload of the secretariats of particular court departments, which should enable an equal distribution of the clerical staff between the departments, depending on the number of responsibilities (Odlanicka-Poczobutt, 2013), developed by W. Hajduk, president of the Territorial Court in Gliwice of the previous term, presently the Deputy Minister of Justice (Hajduk, 2011).

The search for the possibility to create a system of measuring the standards of operating in the common judiciary is real necessity. The processes and operations in courts are usually complex and abstract, and employing simplified indicators defining the final results distorts the measurement.

7.5. Conclusions

The analysis of the inflow of cases of different categories to the courts of particular levels allows for the conclusion that the process of equalizing the distribution of the inflow of cases to particular courts needs search for the possibility to create a system of measuring the standards of operating in the common judiciary is connected with major difficulties and still remains undone. The complex and abstract processes and operations in courts can't be described by simplified indicators defining only the final results, because it distorts the measurement. The metrics used in the judiciary are not used in controlling or planning. Past performance described by the statistics doesn't show which periods are connected with the prolixity (is it a remaining case from the year before, or from two or more years before).

The faultiness of the applied method causes the transmission of a falsified image of the results of the courts' activity and an increasing dissatisfaction of the society. The basis of the effective work of courts should be a properly conducted analysis and measurement, which is supposed to constitute an element of the motivation to enhance efforts in terms of improving the activity.

VIII

MAREK MATULEWSKI

INNOVATIVE TECHNOLOGIES AS A MANIFESTATION OF ENTREPRENEURIAL TACTICS IN LOGISTICS

8.1. Introduction

Information currently plays an extremely important role. Contemporary society is called the 'information society' and is described as a structure in which "information occupies a central place (previously taken by physical resources), initiates and is a causative factor for everything (...)" (Webster, 2015, 10). The authors of pertinent literature claim that it may efficiently replace any physical goods in almost all human activities at least temporarily. Due to the fact that there are numerous definitions of the term 'information' considering various aspects of human activity, the one which seems most appropriate for the subject of this work is "In social and economic systems information is treated as an economic category and it is perceived as (Oleński, 1997):

- cost free goods,
- a resource,
- a product,
- a production factor,
- merchandise,
- an element of economic infrastructure".

It should also be stressed that information is a specific resource, which enables acquisition of knowledge about the surrounding world (including the world of economics). Of course information alone is insufficient. Attributes and parameters, which information should have are not focused on, but it should be realised that in the majority of cases when an enterprise conducts business activities success without appropriate information is unattainable. However, even if a given business has access to appropriate information, it does not guarantee obtaining a permanent competitive advantage in the market because it changes constantly and the information becomes data and is replaced with new bits and pieces of information; (NOKIA may serve as an example of the market leader that lost its position in the mobile phones market through lack of innovations). In order to gain a permanent

competitive advantage an enterprise must resort to innovative entrepreneurship. Entrepreneurship is understood here as all sorts of changes, which are implemented by an enterprise in order to operate successfully on the market (Drucker, 1992). Additionally, one may broaden and modify the definition provided above to some extent as it is human creative thinking and action, which in fact enables gaining permanent competitive advantage. Of course permanent does not mean indefinite in time. Finally, meeting the standards, which are sustained at a given moment, requires implementing technological innovations of various categories. Due to the limited scope of this work, selected innovations implemented in warehousing are the object of its focus.

8.2. Selected technological innovations applied in warehouses

Technological innovations in warehousing may be classified into three groups:

- technical methods of stock handling and internal transportation,
- warehouse equipment, fixtures and fittings,
- information management systems.

8.3. Technical methods of stock handling and internal transportation

Ficoń claims that technical innovations include all machinery, equipment and devices, which directly affect the speed and efficiency of handling processes (Ficoń, 2004). Moreover, as a result of the ubiquitous pressure of time (which finds reflection in the rule of seven R – right product, right quantity, right condition, right place, right time, right customer, right price) such solutions also affect the safety of the workplace and increase the protection of handled goods and materials against damage or loss. When designing and using such solutions, one must realise that they must provide a fast flow (adequate for the standards applied in a given enterprise), sufficient handling capacity and required level of safety and protection (for both workers performing operations and the handled stock). At the same time it should be appreciated that such solutions and systems do not operate in a vacuum but constitute an element of the whole complex system. Such a complex system must operate effectively in the information age. Therefore, technical methods of warehouse handling and internal transportation must be coordinated with the ex-

isting, internal or supply chain, information system. Furthermore, it is difficult to imagine the operation of any logistic business without some IT system. An IT system, according to Kisielnicki and Sroka, is a separated part of an information system, which is computerised for some purposes (Kisielnicki, Sroka, 2005). This definition needs some extension as a result of changes that have taken place in the last decade. Now the information system also operates in WAN and the Cloud (Wyld, 2010).

There are numerous solutions meeting those requirements. Such solutions may be illustrated by describing systems applied by such leaders in the warehousing services market as Doosan or Still. Doosan has invented a completely new type of a state-of-the-art forklift. It is constructed of modules, which enable it to change its basic parameters including lifting and changing the inclination angle of the operator's cab. It is equipped with ergonomic lighting of the cab. Additionally it is fully compatible with the existing IT system (which so far has been applied only in very expensive high-storage warehouses). Due to its features the forklift provides very comfortable working conditions. The cab is made of glass and provides 360 degrees visibility. It is equipped with sliding door, intelligent lightning (adjusting itself to the conditions outside and it is in compliance with the so-called concept of warming light), cab air conditioning, floor air sweeping, etc. The forklift meets all environmental protection norms and air quality norms due to its structure and the application of a hub-motor driving system. Information needed by the operator is displayed on the front windscreen of the forklift. There are also some additional devices such as scanners and readers, which collect data from packaging (there is the additional possibility to apply barcode and RFID systems). The forklift is also equipped with a computer system completely integrated with the warehouse or company computer software. The solutions enabling visualisation of the final place and location of a given product within the stock have also been applied (NiuLiu L., Hong S., WeiGuo Z., YuPing.M., Xue G, 2013).

Solutions, which are manifestations of innovative logistic entrepreneurship, are still applicable by taking advantage of existing solutions and combining them with new ones. Blue-Q = IQ is an example of the former solution – it is a corrective activity intended to adjust already existing solutions to new expectations and requirements of recipients. Blue-Q = IQ is the intelligent auto pilot for economy and ecological responsibility. It may be implemented in older types of forklifts already in operation. To put it simply, this system turns off all forklift functions, which are not needed for the performance of a specific task. Consequently, the manufacturer

claims it helps save forklift energy consumption. The energy saving depends on the model and sophistication of a forklift and may vary from 10% to 20% (Kwiatkowski, Gelsen, 2011).

The example of the latter solution is the system of designing new forklifts. On the one hand such a system enables introduction of innovation at the very first stage of forklift manufacturing that is at the conceptual level. Therefore, new fork lifts are equipped with zero-emission or hybrid systems. Thus, forklifts may be used in a wider range of situations and conditions and are better adjusted to client expectations. Still it also implements solutions helping to integrate the already existing IT system in a given warehouse with the IT system of a given equipment unit or device (e.g. a forklift). Additionally, the systemic approach to designing forklifts enables the creation of new solutions combining universality and far-fetching specialisation. An example of such an approach is a new forklift (cubeXX) combing six various solutions, which are horizontal order-picking trucks, high-lift pallet trucks, tugger trains, trucks for double-stack use, low-lift pallet trucks and counterbalance forklifts. Such solutions are required most now. It should be stressed that they are highly automated as far as the performance of specific processes is concerned and may be quickly converted into the required mode of operation. They are also characterised by high operational flexibility. They are environmentally friendly (because of the power source and applying energy-saving modes, which turn off functions not needed at a given moment. They are also very compact as in the automatic mode of operation or stand-by mode the fork and the cab may be folded. Consequently, it occupies a limited space. It may be used in narrow aisles due to the possibility of charging its state-of-the-art lithium-ion batteries with chargers installed in specially designed narrow rack shelves. The next advantage of such solutions (apart from a relatively limited size, especially when folded) is an amazing maneuverability provided by modular construction. The forklift may turn its wheels in one place 360 degrees. Therefore, the minimum width of aisles and other communication routes may be significantly narrower, which of course enables placing more racks in one warehouse and consequently provides additional profits considering the fact that the prices for renting warehouse space are increasing in the long term. In other words such solutions enable decreasing space necessary for internal warehouse transportation and at the same time still increasing the storage space.

8.4. Warehouse equipment, fixtures and fittings

They play an extremely important role as far as safety of persons and goods in the course of warehouse handing activities are concerned. Warehouse equipment, fixtures and fittings, being the technical furnishing of warehouses, include various machines, installations, devices, equipment and special measuring and control systems. Some examples (Ficoń, 2004):

- furnishing for storage such as racks, shelves, hangers etc.,
- measuring and control devices such as thermometers, scales, etc.,
- air-conditioning and ventilation equipment,
- fire-extinguishing fixtures and fittings including alarm systems, fire extinguishing systems and equipment (e.g. extinguishers),
- auxiliary devices for storage and handling such as pallets, containers, rack tops,
- devices serving technical and organisational purposes.

All these innovations play an extremely important role in modern warehousing. One of the most important aspects is an already mentioned trend to maximise the storage space and make the storage in a warehouse as flexible as possible. Semi-automatic racks are an example of such solutions meeting the criteria of intelligent organisation of warehousing space. The system is equipped with a self-propelled platform powered by batteries. The system may replace previously applied systems with drive-in and drive-thru racks. An additional advantage of such a solution is a possibility to store goods of diverse features (various sizes and weights of palletised loads). In the event of such non-standard units numerous distortions were observed in warehouse handling processes. The goods could be damaged when placing them on drive-in and drive-thru racks, the pallet units could be blocked and stuck in the course of gravity handling on gravity floor racks (as a result of blocking the unit in a channel). It should be stressed here that such solutions have a number of features, which in one situation may be their greatest advantage and in another their greatest drawback. Among those features one may enumerate the following:

- a limited durability of a trolley rail (the application of heat treated rails – heat treating enhances the durability of the rail up to tens of thousands of cycles),
- storage capacity of one rack shelf (in the majority of cases limited to 1 tonne),
- some limitations in the access to the rack (due to the size of aisles),

- limitation in the carriage capacity of forklifts and trolleys and as a result self-propelled platforms (in the majority of cases limited to 2 tonnes),
- the possibility to operate the forklift and platform from the forklift control panel or remote control panel displaying data on a special screen (the device is equipped with a microcomputer, which enables feeding in the operational data) and also to integrate complex systems with the WMS (Warehouse Management System),
- each platform is powered by an internal battery (of capacity adjusted to the intensity of use so that the system is in operation for the whole shift of warehouse workers),
- the possibility to apply a larger number of platforms in one system (that is to say in the case when there is a need to increase the intensity of operations one may install an additional platform. This process is extremely simple and it consists in transporting a platform on a forklift and placing it in the proper place by choosing a special function button by the system operator),
- making the number of work cycles dependent on the conditions present in a given part of the warehouse (e.g. temperature in cool or refrigeration rooms may require the installation of batteries having higher capacity)
- the need to take out the battery in the case of charging its external station.
- high precision of work and performed operations (resulting from the installation of at least four sensors, which help determine the location in respect to the channel),
- the possibility to fully integrate them with the WMS and similar systems.

Summarising, such solutions are more and more popular among consumers due to their flexibility enabling on the one hand to manipulate the storage space and also when dealing with stored goods of various sizes and weights. Additionally, such solutions provide safer storage environment limiting the numbers of damaged equipment, furnishings and fittings and goods. As a result of the dynamic development of chemical power sources (including fuel cells) the greatest disadvantage being the large size of batteries and the need to use them in rooms with the temperature not falling below -20°C has been almost eliminated.

8.5. Information Management Systems

Living and running a business in information society, one can hardly imagine a situation in which any commercial activity could be carried out without the use of

some information management system. Such a situation results directly from present conditions, which include the ubiquitous pressure of time, globalisation and the growing expectations and demands of potential users or consumers. Simultaneously one witnesses the information flood phenomenon, in other words, a non-linear growth in the number of pieces of information that may be observed worldwide in almost all spheres of human activity. It should be stressed that information has become one of the most important intangible commodities of any business or organisation. Consequently, information due to its growing role in the information age, starts replacing physically existing resources. Simultaneously information is an economic category, which is treated equally with products or stock in contemporary social and economic systems.

Currently more and more enterprises implement new software being integrated information systems, which enable the fulfilment of various growing requirements and attainment of commercial objectives. For instance logistic companies implement the so-called Warehouse Management Systems (WMS), which enable integrated management of the whole company including complex warehouse activities such as controlling the movement and storage of materials. Technological innovations, which manifest entrepreneurial tactics in logistics, may be observed in the following feasibilities:

- possibility of implementation of specialised software, which formerly was available only to the richest companies and now is affordable even for small and medium ones,
- possibility of implementation of specialised software and combining it with various systems of information processing such as bar codes, RFID, Radio Frequency or Voice Picking),
- feasibility of implementation of state-of-the-art solutions in integrated systems such as the cloud.

Now the criterion of the size of an enterprise is no longer as important as it used to be. Such systems and software may be implemented in almost any business, which operates within a supply chain. The challenge, however, is to predict the needs and expectations of present and future clients who are specialists aware of their needs in the global economy.

It should be stressed that the Warehouse Management System may be supplied with various systems boosting information flows such as Radio Frequency (used for wireless exchange of data by radio waves), RFID (used for marking and later on identifying various materials and goods based on radio transmission), bar-

codes (graphical marking of products enabling their identification with electronic bar code scanners) or Voice Picking (recognition of voice messages generated by system users and sending them to the system. Voice technology takes advantage of speech recognition and speech synthesis tools. Company workers may communicate with the WMS orally. The equipment of a worker consists of a wireless, wearable computer with a headset and microphone. The worker says commands to the microphone and the software recognises instructions received by voice, next the worker needs to confirm the instructions verbally so that the system can perform them. The connection between the wearable computer or voice terminal and the WMS is possible via a radio frequency local area network. The instructions enable performance of particular activities in the system). The WMS enables taking advantage of the cloud. (The WMS is a real-time application. It should be remembered, however, that its effective operation depends on the fast and efficient wide area network (WAN). Slow Internet connections make the system inefficient and result in stoppages. WAN must have high channel capacity and be reliable. Therefore such WMS solutions are used only by enterprises, which possess broadband Internet access that enables high-speed data transmission and guarantees trouble-free operation.

8.6. Conclusions

Summarising, technological innovations are in a way a manifestation of entrepreneurship in logistics, which characterises logistic companies intending to gain a permanent competitive advantage over other entities operating in the same industry. In order to gain such a permanent advantage, a company must keep its 'old' clients and acquire new ones. In order to achieve that ambitious objective a company must meet expectations of potential clients who must be tempted to change logistic services' provider. Meeting these expectations in the information age requires applying new IT tools. They must be adjusted to continuously changing market requirements and standards. In other words an enterprise is forced to apply 'intelligent solutions', which satisfy the needs of individual clients and give the enterprise some operational flexibility. The solutions described above meet those criteria. On the one hand due to their specialised features they make it possible to achieve high efficiency of the undertaken activities, and on the other hand they ensure flexibility, which is necessary in efficient warehouse management. Consequently, they enable logistic companies to gain some added value (Klepacki, Gidziński, 2015). Furthermore, in accordance to the report prepared and published by the Polish Panel of

Logistic Managers who surveyed logistic enterprises having warehouses (statistically: 21% had warehouses of an area of 1 000m^2, 17% had warehouses of an area up to 2500 m^2, 25% had warehouses of an area up to 5000m^2, 15% had warehouses of an area up to 10 000 m^2, 22% had warehouses of an area exceeding 10 000m^2) in the territory of Poland, 47% surveyed enterprises use the ERP software with warehousing modules. Moreover, over 33% use the WMS. Only 16% of enterprises use dedicated software enabling them to perform their tasks creatively. The analysis of opinions of both users and decision-makers (persons responsible for implementing and choosing software type) provides even more interesting feedback. It is shown that those persons usually responsible for implementing the software and gaining permanent competitive advantage are logistic managers (over 35%) and the management of the enterprise (about 34%). Surprisingly IT managers decide about such matters only in 7% of analysed enterprises. Therefore, it seems that high level management and the logistic division are decision-makers affecting the choice and mode of implementation of such solutions.

Furthermore, such creative solutions, which are manifestations of entrepreneurship in the logistics industry, help in gaining market advantage as they make the enterprise more flexible and proficient in taking advantage of available resources, equipment and other devices. At the same time it should be remembered that there has been no comprehensive research carried out in this respect and the findings obtained in such investigation might be successfully used by commercial entities. Thus undertaking further research in that scope is recommended.

IX

ANNA MEMPEL-ŚNIEŻYK

LOCAL AUTHORITIES IN CROSS-BORDER COOPERATION - EXAMPLE OF POLISH-CZECH PARTNERSHIP PROJECTS

9.1. Introduction

The changes which take place in contemporary economy do not reduce interest in locality. On the contrary, it shows that a spatial unit at the local level is often left to itself in the context of changes and the problems resulting from them. It is at the local level that these changes are felt most. Nowadays, there is a great focus on the effects of cooperation between local cross-border entities on local development. On can underline that the creating social, economic and organizational relationships has become the fundamental reference of the modern innovative economy. An important fact is that connections between different economic entities becoming more and more significant and can be seen as an instrument of solving economic problems. The connection between various entities of economic sector are one of the answers to achieve economic growth in accordance with knowledge economy assumptions.

Local authorities play an important role in shaping the environment for economic actors, which can be regarded as an indirect way to achieve policy objectives of local socio-economic development. Literature provides a number of divisions and classifications of the ways in which local authorities can affect the development of local entrepreneurship in the community via technical infrastructure, support for institutional, organizational and economic incentives. However, one should not forget about possibility of cross-border cooperation. Local government of cross-border unites' should use its border location and look for opportunities and benefits for joint development paths.

9.2. The role of local authorities in cross-border cooperation

In order to explain the role of local authorities in local development and in cross-border cooperation one can start with some basic information. Cross-border cooperation (CBC) was initiated in the 50's in Western Europe at the Norwegian-

Swedish-Finnish border, Dutch-German border and German-French border. In countries such as Spain, Portugal and Greece cross-border cooperation was started much later, in the 80's and in Central and Eastern Europe after 1989. "Its development was most substantially influenced by the *European Outline Convention on Transfrontier Cooperation between Territorial Communities or Authorities* signed in Madrid on May 21st, 1980, effective from December 22nd, 1981" (Halas, 2007). To underline the importance and substantiate the cross-border cooperation for Poland one can refer to *European Charter of Border and Cross-border Regions* (document signed in 1981, by Poland in 1995). It defines borders as "scars of history". Cross-border cooperation, according to this document, is seen as a powerful way to reduce the negative effects of the border. It is aimed at improving living conditions, strengthening and promoting relations between inhabitants of borderlands (*European Charter ..., 1997).* Another The document determining the cross-border cooperation in Europe is *European Charter of Local Self-Governmen*t (*European Charter..., 1985).*

The discussed cooperation was supported by the EU through several programmes and initiatives eg. INTERREG Programme: Interreg I (in 1990-1993), Interreg IIA (in 1994-1999), Interreg IIIA (in 2000-2006). It was the largest initiative of the European Union in promoting cross-border cooperation, firstly in the Member States of the European Union (Halas, 2007). Important was also PHARE CBC Programme initiated by European Parliament in 1994. This programme was aimed at stimulating integration of the countries of Central and Eastern Europe and the European Union, PHARE CREDO established to support cross-border cooperation between countries of Central and Eastern Europe, PHARE TACIS promoting cross-border cooperation of countries belonging to the Commonwealth of Independent States with the countries of Central and Eastern Europe, and the Russian-Finnish border. Moreover, the EU activated also MEDA Programme for Mediterranean countries that are not members of the EU and CARDS Programme for the Western Balkans (*Instrumenty finansowe..., 2012).* These are only a few first prepared and implicated programmes and till now cross-border cooperation in Europe in continued by many programmes and initiatives.

Experiences connected with the role of local authorities in local development confirm their importance in this process. It needs to be mentioned, however, that local authorities are not the only actors of local development. Nowadays, there is a great focus on the effects of cross-border cooperation between local actors from neighbouring countries. Local authorities provide unique added value in the devel-

opment process. Apart from defined activities local authorities exceed their locality and play an important role in mobilising interested actors for co-operation. In this way they contribute to creating the spirit of cooperation in achieving joint developmental aims. Local authorities are engaged in development processes by increasing public awareness and supporting this process through their proximity, experience and the knowledge of specific needs of local communities (Mempel-Śnieżyk, 2008). The role of local authorities is significant and may create favourable organizational and infrastructural conditions. Infrastructural facilities are a major investment in supporting the development of economic activity at the local level. Infrastructural investments contribute to collective development of entrepreneurship and local businesses benefit from the investments (Makieła, 2008). Creating favourable conditions for the location of companies in a particular territory is extremely important not only for local authorities but also for the local community. This is connected with the fact that it is the local market which is the base for companies in terms of supply of labour resources, materials, intermediate goods, financial resources, use of advisory services or promotion, which, in turn, contributes to the socio-economic activation of the territory (Markowski, Stawasz, 2001).

For this reason, the preparation of an investment offer by local authorities both to new potential investors and already existing ones seem to be extremely important, especially taking into account the benefits of dynamization of socio-economic development. To change the business environment, local authorities apply the so-called instruments, shaping the external benefits which include all functional characteristics affecting the decision to locate businesses: system of local business and technical infrastructure, local natural resources, local human resources, the environment, location availability, the scale and structure of local demand (Sztando, 2004). Local government undertake actions in creating conditions for economic activity. It can be coordinating the activities of individual entities, problem solving, conflict resolution, which in future could cover the whole sector, initiating economic projects beneficial in terms of harmonious development, initiation of co-operation between enterprises and the business environment and create favorable conditions for new entrepreneurs (Regulski, Kocoń, Ptaszyńska-Wołoczkowicz, 2008). Many researchers are looking for an answer to achieve aims and which instruments should be used.

Taking into account the diversity of cross-border areas one can distinguish different characters and conditions of cross-border cooperation established by local authorities. Considering the proximity of local authorities to entrepreneurs, their

knowledge of endogenous and exogenous conditions of the spatial unit and competence, they very often initiate cooperation between neighbouring border areas. On a local scale, the cross-border initiatives are based on flexible cooperation networks, some regions developed effective institutional forms of cooperation. One can also remember about "the significance of cross-border strategies for the development and restructuring of the role of local governance in institutional arrangements and territories" (Church, Reid, 1999). Therefore, one can sum up that local authorities are taking action, whose primary goal is to create conditions to facilitate the formation and operation of businesses also through international cross-border cooperation (in the case of border location).

9.3. Polish-Czech cross-border cooperation on the example of Euroregions and partnership projects[19]

Poland and the Czech Republic are neighbouring countries which are connected via similarities in history, having long-lasting relations in social, cultural and economic fields, and similarities in system transformation and language affinity (Borsa, 1996). Polish-Czech cross-border cooperation is determined by the groups of main objectives according to the aforesaid European Charter of Border and Cross-border Regions (Europejskiej Karty Regionów Granicznych i Transgranicznych). Among them there are (Kołodziejski, Szmigiel, 2004):

- giving a new quality to borders: meeting areas,
- strengthening economic and socio-cultural conditions,
- transforming regions into the driving force of cross-border cooperation,
- unification of spatial planning in Europe,
- eliminating the economic and infrastructural barriers and disparities,
- intensification of sustainable cross-border spatial planning and regional policy,
- development of infrastructure and economy,
- enhancing cross-border environmental and nature protection,
- solving cross-border passenger flow,
- supporting cross-border cultural cooperation,
- organizational and legal measures.

[19] A. Mempel-Śnieżyk: The importance of local autorities in local development and cross-border cooperation: in printing

An important dimension of the Polish-Czech relations and cooperation is connected with establishing Euroregions which, in principle, were established to (Kierzkowski, 2010):

- contribute to creating sub-regional cooperation in Europe through the creation of international relations
- bring inhabitants of cross-border territories together culturally and economically
- activate material and immaterial local and regional society

The example of Beskidy Euroregion demonstrates the possibility of economic, tourist, cultural and sports development taking full advantage of natural and landscape values. It was made possible due to: supporting border traffic and tourism, activities aimed at protecting and improving the natural environment, spatial planning, building joint cross-border infrastructures or cultural exchange[9].

Śląsk Cieczyński Euroregion influences undertaking activities in mutual information exchange concerning culture sport and tourism (participation in tourist and economic fairs in the whole of Europe, modernization of roads and improved access to border crossings). As a result, one can mention e.g. common calendars of cultural or sports events.

The main objectives of Silesia Euroregion are to develop the region, bring Polish and Czech inhabitants and institutions together through raising the standard of living of Euroregion' citizens. This is done via a mutual promotion of investments and economic programmes, vocational trainings, programmes eliminating unemployment, cooperation and exchange of local societies, improvement of the natural environment, mutual assistance in case of natural disasters, development of economic cooperation, development of coordinated cross-border spatial planning, building joint cross-border infrastructure, building complex information system.

Pradziad this is the next Euroregion located in the Polish-Czech cross-border area, which is aimed at supporting: cooperation aimed at developing the economy and raising the quality of life, spatial planning, building and transforming transborder structures, natural environment protection, preventing natural disasters and eliminating their consequences, taking care of common cultural heritage, developing tourism and border crossings developing technical infrastructure in cross-border regions, cultural and sports exchange, economic development of border regions as well as obtaining and exchanging tourist information.

Euroregion Glacensis concentrates on easy crossing state borders, good road and rail connections, modernization of the existing communication networks in the

borderland, creating favourable conditions for common enterprises, establishing Polish-Czech Association for Economic Support (Polsko-Czeskie Towarzystwo Wspierania Gospodarki), learning the language of the neighbour, summer camps for Polish and Czech teenagers, setting up a common university, joint regional planning, creating maps of the borderland and protected areas, establishing special economic zones and free trade areas, levelling economic potential, reducing unemployment, setting up Sudety Bicycle Route (Sudeckiej Trasy Rowerowej) and on - line tourist information and accommodation reservation, creating the network of cross -border information offices .

Thera are also Dobrava and Nysa Euroregions. Their objectives are similar to the other of Euroregions.

When discussing Euroregions one can emphasize that they are usually established by local and regional authorities of neighbouring countries. The above presented initiatives resulting from Euroregions' functioning demonstrate the importance and role of local authorities in cross-border cooperation. In the view of the above-presented investment and achieved aims in Euroregions, one can admit that it was feasible only with the participation and support from border authorities. Additionally, the cooperation undertaken via Euroragions, so called territorial cooperation, is financed from European Regional Development Fund (Ślusarczyk, 2012).
Interesting aspect of Euroregions are emphasized by M. Perkmann, who describes the importance of Euroregions for entrepreneurship and mentions that Euroregions can be perceived as a new type of regional territorial entities (Perkmann, 2012).

The European integration process, accession of Poland and Czech Republic to the Schengen zone, a significant increase in the Internet access, the establishment of Euroregions and enhanced cross-border cooperation contributed to the free movement of capital, services and workers, to increasing economic exchange in the border areas, and to increasing interest in starting a business in the neighbouring countries. This also created the need for information about trade partners and principles of running a business in Poland and the Czech Republic[20].

The partnership projects realized between both countries are a response to the arising needs. An example of such a project is Entrepreneurship without borders. Polish-Czech on-line economic portal (Przedsiębiorczość bez granic. Polsko-czeski internetowy portal gospodarczy), which resulted in creating Polish-Czech On-Line Economic Portal. The project was prepared and implemented by Wałbrzych municipality and Voivodeship Economic Chamber in Nachod. This on-line portal

[20] http://www.plcz.eu/strona/40/O_Projekcie/(12.02.2012).

offers a possibility of finding detailed information concerning the principles of running a business in both countries. The project is aimed at: all Polish and Czech entrepreneurs, regardless of the activity type, people intending to start a business, business environment institutions in the Polish and Czech borderland[21].

The aims of the project are: free advertisement on the Internet, finding business partners, clients and suppliers in entrepreneurs' database listed on the Portal.[22]
Strategy of integrated cooperation Czech-Polish borderland (Strategia zintegrowanej współpracy czesko-polskiego pogranicza) is another example of strengthening Polish-Czech cooperation, which is aimed at developing strategy of integrated cooperation – analyses concerning deepening cross-border cooperation between partners through the establishment of the European Grouping of Territorial Cooperation (Europejskiego Ugrupowania Współpracy Terytorialnej). The prepared analyses should help to diagnose the substantive scope, geographical area of the impact of the new forms of territorial cooperation – EGTC, and lead to developing a common and the most optimal conception of EGTC operation in the Polish-Czech borderland[23].

In the Polish-Czech borderland there are many projects and initiatives implemented to improve and strengthen cooperation between our countries and to achieve economic and social coherence. In the context of cross-border cooperation one can add that neighbouring areas deal with common problems resulting from long-term bonds or history. This implies undertaking similar activities, but these activities are only workable when borderland authorities display willingness to initiate and coordinate mutually beneficial projects (*Zagospodarowanie transportowe*...., 1997).

9.4. Conclusion

In view of the above, one can admit the role of local authorities is important for local development. Moreover, one should underline their competence to initiate international cooperation with the authorities of the neighbouring territorial units. Cross-border cooperation is perceived as a chance for achieving economic and social coherence in borderland areas. The regional disparities, which occur both between regions and inside one region, are often structural in nature. They are conditioned by: peripheral location, difficult climate and geographical conditions, insuffi-

[21]http://www.plcz.eu/strona/1/Strona_główna/ (12.02.2012).
[22] http://www.plcz.eu/strona/40/O_Projekcie/ (12.02.2012).
[23]http://www.portalsamorzadowy.pl/komunikacja-spoleczna/polsko-czeska-wspolpraca-we-wroclawiu,30619.ht m l (12.02.2012).

ciently developed infrastructure, unfavourable economic structure and low level of professional qualifications of the inhabitants. Therefore, it is important for the border areas to cooperate towards achieving socio-economic development via joint solving problems of the borderland. From the perspective of the “center" of the region these problems may be neglected or overlooked, and only the border authorities and their cooperation is likely to affect them and solve them.

In the case of Polish-Czech cross-border cooperation one can underline constant continuity and regularity in the pursuit of common goals. Taking into account decisions and measures taken by both the central and local authorities of Poland and the Czech Republic one can observe the constant attempts to enhance and strengthen economic relations between both countries.

X

ANDRZEJ SOŁOMA

RATIONALITY AND IRRATIONALITY OF FINANCIAL DECISIONS FROM THE PERSPECTIVE OF BEHAVIORAL ECONOMICS

10.1. Introduction

Financial market participants are guided by different factors and tools in financial decision making. The recent financial crisis has shown that a vast majority of economists were not able to predict either the onset or the scope of the crisis. Advances in behavioral economics indicate that the psychological tendencies of investors concerning the cognitive sphere and the motivational sphere to a large measure determine the perception of economic reality and affect decision making processes by financial market participants. Researchers from the behavioral current assume that people are not able to use strict principles of rationality, but rather employ different kinds of shortened, and sometimes unreliable, information processing methods, which do not necessarily lead to the maximization of expected utility. This study attempts to identify and determine the potential effect of behavioral factors on the financial crisis which started in 2008.

10.2. Classical and behavioral economics

The first psychologist who received a Nobel prize in economics is Daniel Kahneman. He was awarded a Nobel prize in 2002 for using psychological research and laboratory experiments in economic analysis, with particular focus on decision-making processes under conditions of uncertainty. Behavioral economics is defined as a current in economics which uses the achievements of other social sciences, including particularly psychology, for the explanation and interpretation of human economic behavior (but also economic objectives, decisions, processes, states and phenomena). While classical economics is dominated by normative theories determining the principles of rational behavior, in behavioral economics classical economic theories are modified with descriptive models which are mostly the result of empirical tests. Another difference is the attitude to the concept of 'economic man'. In neoclassical economics, the concept *homo oeconomicus* means 'economic man' acting based on constant preferences, with access to all information, always maxim-

izing utility. Man is considered an individual rationally aiming to maximize self-interest. The concept of perfectly rational man equates the Latin term *ratio*, meaning reason, with the Italian *ragione* – reckon, count, to grow rich individually. Behavioral economics not so much questions the dogma of *homo oeconomicus* as it broadens the perspective of the perception and interpretation of economic behavior. The assumption that man is always a rational person was challenged, among others, by such representatives of behavioral economics as D. Kahneman and A. Tversky. They found that rationality was limited by two factors characteristic of the outside world: time pressure and information complexity (Tversky, Kahneman, 1974). To overcome our limited data analysis capabilities, humans have developed a set of heuristics. Heuristics should be understood as certain simplifications based on intuitive evaluation of reality used to replace a complex probability estimation process with simple inference operations. In the behavioral approach, heuristics is also seeking and finding methods for solving different kinds of problems in human behavior, e.g. errors of subjectivism or incomparability of attitudes, as well as other properties of human behavior, such as the reactions of investors in capital markets (a sphere of interest of behavioral finance).

Behavioral economics also differently interprets the process of choice and decision-making by individuals. In neoclassical economics, the rational theory of choice is based on the principle of reality description invariability. According to Sedláček (2012), the use of the *ceteris paribus* formula in models, or assuming that everything else will remain unchanged, causes the fact that "models can be elegant and can fit beautifully into one another," but they are also sometimes very out of touch with reality. Sedláček (2012), writing about excessive, according to him, mathematization of modern economics, accuses it of attaching too much importance to mathematics, while it "has neglected the non-mathematical humanity in us." He notes that although economists notice trends and try to describe their development in model cases, the world is not a model. He argues that mathematics is just the visible tip of the iceberg of economics and the rest of the problem is "much softer and more mystical," difficult to describe with models.

Meanwhile, the same problem can be presented in different ways, which in turn changes the preferences of the decision maker. D. Kahneman and A. Tversky demonstrated that framing had a significant effect on the choices of decision makers, which challenges the classical axioms of rational choices (Kahneman & Tversky, 1979). Kahneman (2011) notes the importance of heuristics and biases in the financial decision-making process. Under the concept of heuristics, Kahneman

understands simplified rules of inference, which people use unconsciously. For example, associative memory contributes to a phenomenon called "confirmation bias", consisting in that people do not check and do not verify hypotheses, but often seek data which will suit their convictions. Kahneman stresses people's tendency to the improper use of causal thinking in situations where statistical thinking would be more appropriate.

10.3. Rationality in economics

Many economists have dealt with the interpretation of rationality in economics. A. Smith and J. S. Mill stress that rationality refers to the problem of maximization, which comes down to man's striving to obtain the greatest possible amount of goods and make such decisions which translate into his own benefits. It is also worth stressing that it is assumed in many classical economic models that attitudes and preferences should be coherent and consistent with empirical observations of the subject (Wilkinson, 2008). The behavior of a person or an institution can be considered rational or irrational, with the observed behavior considered rational when it is consistent with the principle of expected utility maximization. The economic rationality model is related to the problems of preferences, choices and decision-making. A decision is rational when the decision maker maximizes the expected outcomes, i.e., makes the best possible choice among available variants. It is worth noting that besides the classical understanding of rationality presented above, alternative limited rationality models consisting in the use of simple and quick heuristics and making satisfactory, but not necessarily optimal choices, were developed in the second half of the 20th century (Kahneman, 2011). Robert J. Shiller, one of the best-known representatives of behavioral economics, noted that the behavior of investors in financial markets is not always rational because they are susceptible to irrational euphoria and cognitive distortions. Feedback theory suggests that investors are guided by crowd behavior, they estimate too optimistically a rise in assets, buying them at an increasing price, which in turn attracts a growing number of investors. The decision-making process in investing starts with the perception and processing of incoming information. On this basis, investors formulate convictions and then make decisions. However, financial market participants take shortcuts when making choices, i.e., they observe what others do – how they behave. They often yield to the tendency to copy their behavior because they feel more confident and safer. Additionally, during a boom, investors are convinced

that the cause of the rise in their income is their correct investment strategy (Shiller, 2003). The feedback mechanism also increased the size of the speculative bubble in the real estate market in the U.S., whose burst triggered a sharp fall in both trust among market participants and financial instrument prices. A fall in real estate prices, excessive use of financial leverage and household debt made itself felt, which resulted in a drop in consumption. The crisis forced state interventionism in financial markets on a global scale. For example, already in 2008, the amount of bank deposits guaranteed by the FDIC was raised in the U.S. from USD 100,000 to USD 250,000 and also a program of financial assistance and guarantees worth 700 billion USD for the buyout of poor quality assets under the name of the Troubled Asset Relief Program was created. In analyzing the causes of the recent global financial crisis, Nouriel Roubini and Stephen Mihm (2010) state that when speculative bubbles form in the market, heads of central banks passively observe the developments and when the bubble finally bursts – suddenly rush into action and resort to all available measures to repair the damage. However, lifesavers for creditors and borrowers create moral hazard, i.e., the phenomenon consisting in that subjects supported by the state take more risky actions than those which do not have such support and have to suffer the consequences of their mistakes alone. An asymmetrical intervention mechanism may cause wrong interpretation or even investors' conviction that in case of misfortune, the central bank will rescue them, e.g., by lowering interest rates to a level close to zero, which will increase even more the risk of the instability of financial systems next time (Roubini & Mihm, 2010). Such state interventionism increases the probability that new speculative bubbles will also form in the future in other markets.

Another representative of behavioral economics, D. Ariely, professor of MIT, claims that in this field of science it is not assumed that people are completely reasonable calculating machines and are guided by common sense in all cases (Ariely, 2010). On the contrary, the view dominates that people essentially do not act rationally, considering all available options and calculating precisely their value in the short and long term. Irrational human behavior is affected by emotions, social norms and other circumstances.

The French economist Maurice Allais, the Nobel prize laureate in economics in 1988, noted paradoxes of rationality, stressing that statements found in theoretical models are not necessarily reflected in real human behavior (Allais, 1953). He gives as an example of irrational behavior of the so-called "certainty effect" – in economic decisions, people often attribute an irrationally higher value to those possi-

bilities which guarantee a sure gain to them. D. Kahneman and A. Tversky's prospect theory (1979) became the theory which explained comprehensively the Allais paradox. According to this theory, when making choices, people do not calculate logically and precisely in all cases, but form their judgments based on heuristics, committing during numerous, systematic errors. D. Kahneman and A. Tversky identified, among others, heuristics such as representativeness, availability and anchoring.

10.4. The representativeness, availability and anchoring heuristic

The representativeness heuristic manifests itself as the tendency to base judgments on a too small, non-representative sample and inference on this basis about the characteristics of the entire population, i.e., probabilities are usually evaluated by the degree to which A is representative of B, that is, by the degree to which A resembles B (Tversky, Kahneman, 1974). Additionally, the human tendency to seek in a small sample characteristics typical of the entire population involves ignoring the evaluation of probability resulting from baseline values and statistical data. Zielonka (2015) notes that the representativeness heuristic is responsible for an excessively strong reaction of investors to a series of fundamental information with optimistic overtones. With reference to the genesis of the crisis in the real estate market in the U.S., it should be mentioned that investors, observing the constant rise in the value of assets (real estate, shares and derivatives), believed in the continuation of this upward trend.

Tversky and Kahneman (1974) define the availability heuristic as inference based on information easily available in memory or external sources, e.g. in the media. Attributing greater importance to information which easier becomes embedded in memory, with a strong emotional charge (or easier to imagine), can intensify the course of market phenomena and lead to exaggerated reactions. According to the principle of availability, not all information affects evaluations and decisions to the same degree. Tversky and Kahneman (1974) demonstrated that people attribute a higher probability to the occurrence of some event, the more similar examples they know and the easier they remember them, e.g. it is relatively easier to remember a recent event than one more distant in time. For example, the sight of a burning house will probably more strongly affect the subjective evaluation of the probability of fire in the future than reading about the same fire in a newspaper. Such shortened information processing can be a source of irrationality. Information

which is more expressive and linked to emotions has a greater effect on financial risk calculation than statistical data (Zaleśkiewicz, 2011).

One of the best known financiers, George Soros (2010), notes a difference between natural and social sciences. For natural phenomena, there is a cause-and-effect chain connecting one set of facts directly to the next, while in social phenomena, the causes of events are not only facts, but also the views of participants and interactions between facts and views. Additionally, when views stop relating to facts, uncertainty creeps in. For decisions made by financial market participants, the availability heuristic can significantly affect the evaluation of the size of financial risk by ignoring statistical data. According to Soros (2010), when we cannot base our decisions on knowledge, we have to find support in suppositions, which result from experience, instinct, emotions, customs and other non-objective factors. The effect is that in times of increased uncertainty, where the range of possible results is much wider, social theories, including economic theories, are not so reliable. As Dembiński (2012) notes, a financial system based on financial markets is much more dependent on perception, prediction, herd behavior, mood changes and panic than a financial system based on banks. This is the case from the perspective of behavioral finance; market participants try to predict, for example, the value of securities in the context of the behavior of other participants, i.e. the emphasis is placed not on the real value of securities on an economic basis, but on how their value is perceived and assessed by the markets. For example, the results of a study by Grinblatt et al. (1995) show that herd behavior occurs among mutual fund managers. In the financial markets, a transaction in which the value of resale matters above all, induces financial institutions to create opaque products for customers which yield high profits for the issuers of securities. The most characteristic example was provided by the subprime crisis in the United States.

The anchoring heuristic is seen when the originally suggested value in a question (the so-called anchor) affects inference and evaluation formulation. People do not always carefully collect and analyze information during the estimation of unknown values. The reason can be time pressure or a lack or excess of information. In such situations, people often use the values available at a given moment as the basis and relate their own estimates to these values. Tversky and Kahneman (1974) state that anchoring occurs not only when the starting point is given to the subject, but also when the subject bases his estimate on the result of some incomplete computation. The anchoring effect contributed to excessive optimism in the real estate market in the U.S. The boom in the markets was inflating investors' expectations as

to the level of profits and a constant rise in real estate prices. It is worth noting here that the speculative bubble in the real estate market was also supported by different forms of credit expansion by financial institutions, banks and also by the monetary policy of the American Fed. Euphoria and conviction about the attractiveness of financial instruments obscured from market participants the possibility of changes in market trends and a correction of the prices of an already high level of assets. George Akerlof (a Nobel prize laureate from 2001) and Robert Shiller (a Nobel prize laureate from 2013) stress in their book *Animal Spirits* (2009) that institutions granting high risk loans, which were not under sufficient regulation, and risky financial instruments were, among others, at the heart of the crisis in the real estate market in the U.S. Many house purchase loans were granted to persons without a sufficient credit rating and a low income. The institutions promoted their products by offering low installments at the beginning, often concealing the information that their amount will later rise considerably. They effectively acquired customers in the most suggestible group of the least-educated borrowers called NINJA (No Income, No Job, No Assets). A NINJA loan is a nickname for very low quality subprime loans because banks and other lenders used very liberal rules for granting house purchase mortgage loans. Later, financial institutions discovered the possibility of creating new financial instruments from these loans as part of the securitization of assets. After the moment when a collapse in trust among financial market participants occurred, the value of such securities fell sharply, leading to bankruptcy of many of these financial institutions which had significant portfolios of such assets. According to Soros (2010), besides the long-term tendency to increase credit expansion, globalization of financial markets, risky financial instruments and deregulation of the financial industry contributed to the bubble in the American real estate market (Soros, 2010).

In their prospect theory, Kahneman and Tversky (1979) assume that financial decision-making under risk proceeds in two phases: the editing phase and the evaluation phase. In the editing phase, an individual performs a preliminary analysis of the decision-making situation using heuristics to simplify and order the decision making process itself. An important element in the editing phase is determining which outcomes should be interpreted as gains and which as losses. In the evaluation phase, the individual determines the value of each variant to choose the prospect of highest value.

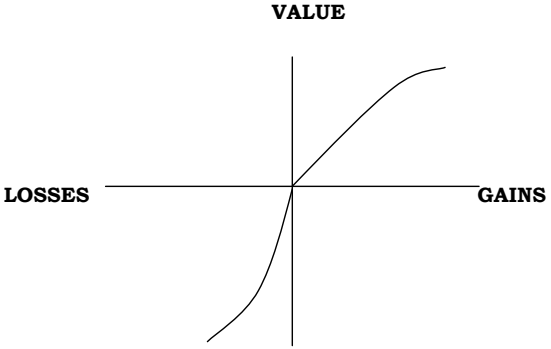


Figure 10.1. A hypothetical value function
Source: (Kahneman, Tversky, 1979).

The value function according to prospect theory (Figure 10.1) shows that changes in gains and losses of lower value are valued more strongly than changes in outcomes of higher value. It is worth noting that the authors of prospect theory also claim that people show risk aversion for gains and high risk-seeking in case of losses. This also means that people experience greater distress because of a loss than experience joy because of achieving a gain of the same size (Tyszka, 2010). Both investors in the financial market and owners of companies from the small business sector are characterized by taking risk in the domain of losses not to sustain these losses (Wolak-Tuzimek et al., 2015). However, human feelings also depend on changes in the size of the variables in relation to the reference point. The reference point can change (for example, under the influence of changes in the market situation), which affects the perception of gains and losses and, as a consequence, a decision is made.

The adopted reference point in the editing phase is important because it determines whether the decision maker considers the obtained outcome a gain or a loss. The so-called certainty effect, according to which people prefer a lower, but surer gain to a potentially higher, but less probable gain, is connected with such perception of gains and losses. Knowledge of the heuristics presented above, based on the ideas that there are reference points and that a loss is perceived more strongly than a gain of the same value, may lead to improved quality of evaluations and decisions made by financial market participants.

10.5. Conclusions

Behavioral economics questions, among others, the truth of the assumptions of classical economics, such as the rationality of a single investor and market efficiency. This study focuses on the cognitive sphere of investors, who use numerous heuristics, or simplified ways of reasoning, which may lead to wrong conclusions and mistakes, in the context of the financial crisis which started in the U.S. in 2008. The psychological tendencies of investors concerning the cognitive sphere and the motivational sphere to a large degree determine the perception of economic reality and affect decision making processes by financial market participants. The most frequent heuristics in the cognitive sphere include the representativeness heuristic, or inference based on too small of a sample, and in the motivational sphere aversion to losses manifesting itself in excessive risk-seeking in the face of potential losses.

XI

KATARZYNA WARZECHA

THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN EUROPEAN UNION COUNTRIES

11.1. Introduction

Nowadays, it is hard to believe in the life without omnipresent information and communication technologies (ICT) and tools. ICT includes such media as: Internet, wireless networks, mobile telephony, means of communication and technologies of any kind. Thanks to which it is possible to process, gather and transfer the data in digital form. Their potential is used in various spheres of life. The modern means of communication- computers, tablets, mobile phones and smartphones, especially those with the Internet access, became an important tool used to achieve the information, to acquire knowledge, to work and to find the entertainment. They are indispensable tools to fulfill social and economic human needs: starting from shopping or e-learning and ending on paying the bills or using public Internet services (such as: e-administration and e-health). The Internet is an invaluable source of knowledge and the mean of trade, the source of instant communication, social and cultural life. It is hard to imagine a day of a modern man without those technological conveniences. It is worth noting that ICT is also used in illegal procedures (cybercrime (Czyżak, 2015), cyber- violence (Ulik-Jaworska, 2009; Warzecha, 2015), cyberbullying (Pyżalski, 2009, 2014)), and overusing or inadequate using of the Internet or a mobile phone may lead to addiction (Jarczyńska, Orzechowska, 2014) such as: the computer and Internet addiction, addiction to sending text messages, addiction to pornography and on-line gambling.

The main aim of conducted analyses is to investigate the level of availability and the use of devices and information and communication technologies in Poland in the comparison to other countries of European Union.

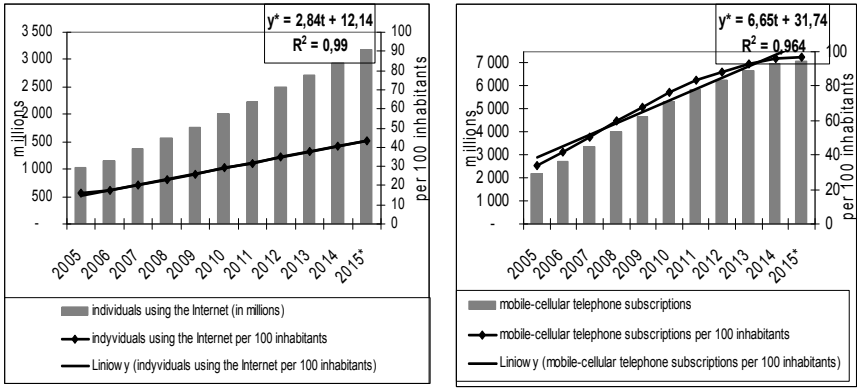
11.2. The use of the Internet and mobile services in European Union countries

The technological development influences the functioning of economy in the broad sense of that term, and new information and communication technologies

(ICTs) exert positive as well as negative consequences on various spheres of socio-economic life.

The most important mean of communication is the Internet. According to the data from European Commission the number of Internet users was rising regularly, year by year, on average for about 221 million users. In 2015, in comparison to 2005, there was more than triple increase of number of individual Internet users (in 2005 there were 1024 million of Internet users and in 2015 there are 3174 million of them)- the data contained in the Figure 11.1. The number of Internet users per 100 citizens (the data contained in Figure 11.1) in years 2005-2015 was rising regularly, year by year, on average for about 3 persons per 100 citizens. In 2015, in comparison to 2005, there was almost three times increase of number of individual Internet users per 100 citizens (in 2005 there were about 16 Internet users per 100 citizens, and in 2015 there are 43 Internet users per 100 citizens).

The consumers and companies more and more often use mobile services. According to the data from European Commission the number of mobile services subscribers was rising regularly, year by year, for about 221 million persons. In 2015, in comparison to 2005, there was more than three times increase in the number of mobile phones subscribers (in 2005 there were 2205 million of mobile phones subscribers, and in 2015 there are 7085 million of them)- the data contained in Figure 11.1. The number of mobile phones subscribers per 100 citizens (the data contained in Figure 11.1.) in years 2005-2015 was rising regularly, year by year, for about 7 subscribers per 100 citizens. In 2015, in comparison to 2005, there was almost three times increase of mobile phones subscribers per 100 citizens (in 2005 there were 33,9 of mobile phones subscribers per 100 citizens, and in 2015 there are 96,8 subscribers per 100 citizens).



*- estimate

Figure 11.1. Global numbers of individuals using the Internet total and per 100 inhabitants, 2005-2015
Source: own work based on the data available at: http://www.itu.int/en/ITU-D/Statistics

Nowadays, information and communication technologies popularized among the society in general, as regards the availability and the low cost of using. Surfing the Internet with the use of mobile devices is more and more popular: while over three quarters (78%) of people between 16 and 74 years old used the Internet over the span of last three months before the research in 2014, more than a half (51%) used mobile devices (such as: laptop computers, tablets or mobile phones)[24] for the same purpose. However, the Member States differ in ways of using mobile Internet, which is visible in Figure 11.2. The percentage of persons, who used mobile devices by the agency of mobile phone networks or wireless networks (Wi- Fi) outside their house and the workplace, was the most significant in Sweden (76%) and in Denmark (75%), while it was about 70% in: Luxembourg (70%), the United Kingdom (73%), the Netherlands (70%). Next, the least significant percentage of such persons was in: Bulgaria (27%), Italy (24%) and Romania (25%)- the data presented in Figure 11.2. According to the Eurostat data, every fifth citizen of European Union never used the Internet (In Poland 28% of individuals between 16 and 74 years old does not use the Internet).

[24]http://ec.europa.eu/eurostat/statistics-explained/index.php/Information_society_statistics_-_households_and_individuals/pl (access: 16.11.2015)

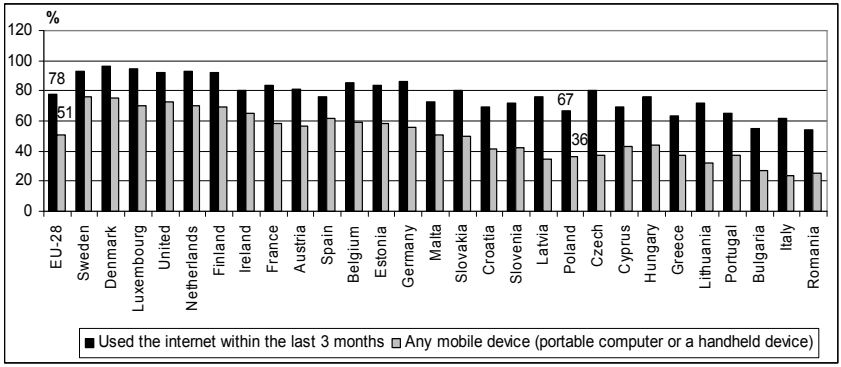


Figure 11.2. Use of Internet and mobile Internet use, 2014 (% of individuals aged 16 to 74)
Source: http://ec.europa.eu/eurostat/statisticsexplained/index.php/Information_society_statistics_-_households_and_individuals/pl

According to the Global Digital Statistics 2015 report (from January 2015) 42% of overall world's population has the access to the Internet. The active users of social networks make 29% of overall world's population (34% in Poland) where 23% of world's population uses mobile devices to connect to social networks (mobile phones) – in Poland it is 24%. Almost 1,366 billion of people in the world are the users of Facebook where 83% of them have the access to social network by mobile devices. The enormous access to data and the data downloading, the growing popularity of mobile technology (especially smartphones) and mobile services (the internet, 3G, music transmission, various applications) are the most important trends in ICT sector, in which many specialists could find a workplace.[25]

To provide electronic services of any kind, in the first place the broadband access to the Internet is necessary. The Polish national strategy of development of broadband Internet access is legally valid, it was approved in November 2013 and it will be in force until 2020. Polish National Broadband Plan foresees that 100 % of households and companies should have access to Internet connectivity of at least 30 Mbps until 2020 and 50 % of households and companies should have access to Internet connectivity of 100 Mbps until 2020. The National Broadband Plan focuses mainly on supporting the broadband investments and expansion through the initiation of regulatory funds[26].

[25] konferencje.frse.org.pl/TIK/index/land:pl [access: 16.11.2015]
[26] http://ec.europa.eu/digital-agenda/en/informacje-o-kraju-polska [access: 09.11.2015]

11.3. The Digital Economy and Society Index (DESI)

The European Commission created Digital Economy and Society Index (DESI) for international comparisons. The Digital Economy and Society Index (DESI). DESI is a composite index that summarizes relevant indicators on Europe's digital performance and tracks the evolution of EU member states in digital competitiveness. It includes five main dimensions:

- Connectivity - The Connectivity dimension measures the deployment of broadband infrastructure and its quality.
- Human Capital - The Human Capital dimension measures the skills needed to take advantage of the possibilities offered by a digital society.
- Use of Internet -The Use of Internet dimension accounts for the variety of activities performed by citizens already online (consumption of online content (videos, music, games, etc.), online shopping and banking).
- Integration of Digital Technology -The Integration of Digital Technology dimension measures the digitization of businesses and their exploitation of the online sales channel. By adopting digital technology businesses can enhance efficiency, reduce costs and better engage customers, collaborators and business partners. The Internet offers access to wider markets and potential for growth.
- Digital Public Services -The Digital Public Services dimension measures the digitization of public services, and focuses in particular on eGovernment and eHealth.
- Each score in the DESI belongs to the interval (0,1) with higher values representing better performance.

The DESI 2015 shows that both the European Union as a whole as well as individual Member States are progressing towards a digital economy and society. However, member states are at different levels of development and are progressing at different speeds (Figure 11.3.).

According to the score in the DESI, countries were grouped in:

- digital high performance countries - Denmark, Finland, Sweden, The Netherlands. They are world leaders in digital.
- digital medium performance countries - Austria, Belgium, Estonia, France, Germany, Ireland, Lithuania, Luxembourg, Malta, Portugal, Spain, the United Kingdom. They are doing well in certain areas but still need to progress in others.

– digital low performance countries – Bulgaria, Croatia, Cyprus, Greece, Hungary, Italy, Latvia, Poland, Romania, Slovakia, Slovenia, The Czech Republic. They need to step up their performance in a number of areas and catch up with the rest of the EU.

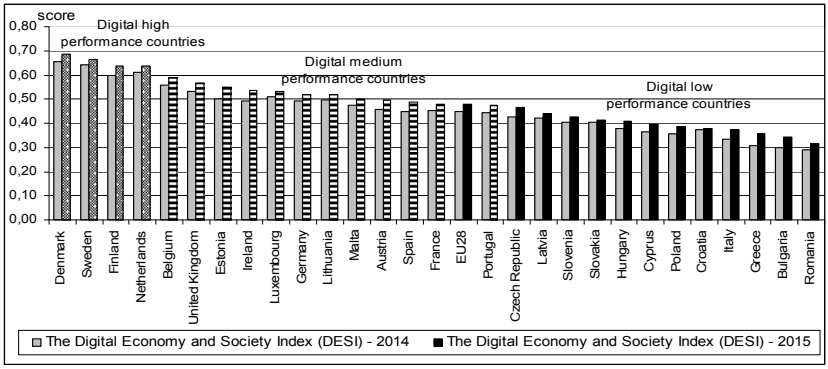
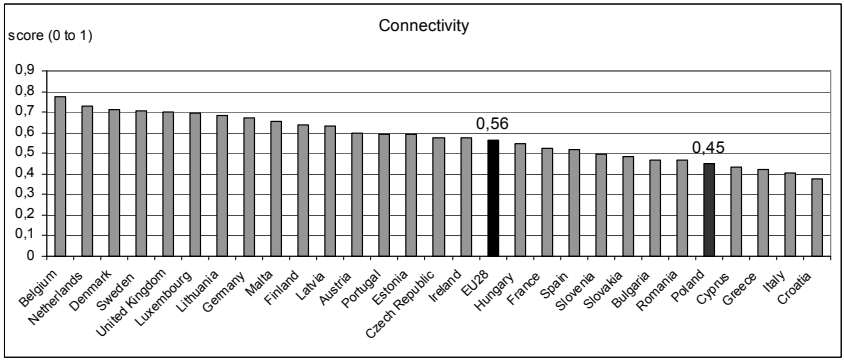
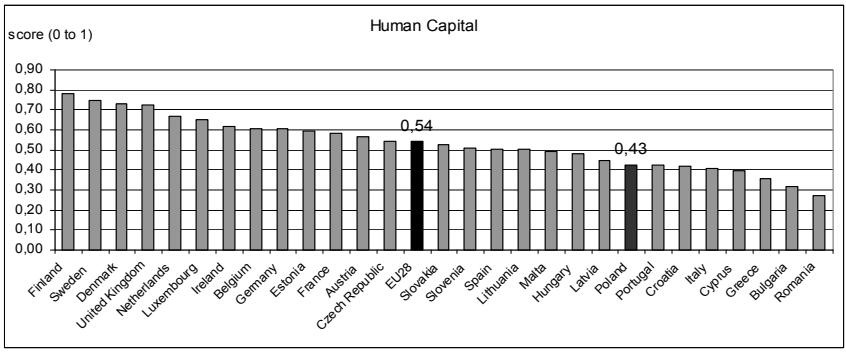


Figure 11.3. The Digital Economy and Society Index (DESI) - UE 28 countries by 2014 and 2015 year
Source: own work based on the data available at http://digital-agenda-data.eu

In DESI 2015, the European Union as a whole scores 0.48, which represents an improvement in digital development in comparison to last year, when it scored 0.45 (2014)- data contained in Figure 13.3. While the EU improved in every DESI dimension over the last year, the greatest progress was attained in Connectivity (from 0.51 to 0.56) and in the basic digital skills of its citizens (from 55% to 59% of the population)- data contained in Figure 11.3. and in Figure 11.5.




Human Capital
score (0 to 1)
0,90
0,80
0,70
0,60
0,50
0,40
0,30
0,20
0,10
0,00
0,54
0,43
Finland
Sweden
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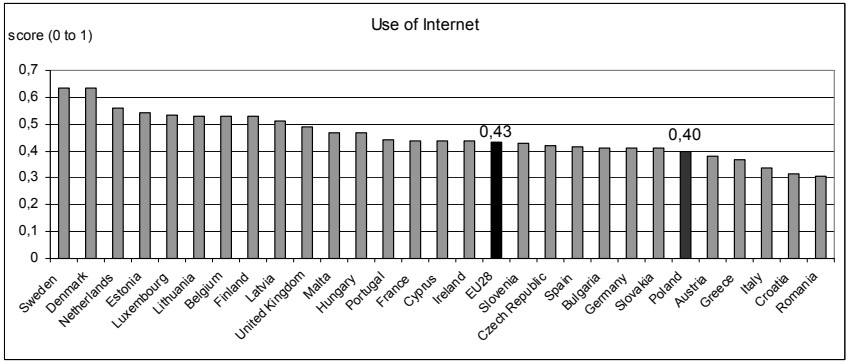
Use of Internet
score (0 to 1)
0,7
0,6
0,5
0,4
0,3
0,2
0,1
0
0,43
0,40
Sweden
Denmark
Netherlands
Estonia
Luxembourg
Lithuania
Belgium
Finland
Latvia
United Kingdom
Malta
Hungary
Portugal
France
Cyprus
Ireland
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Croatia
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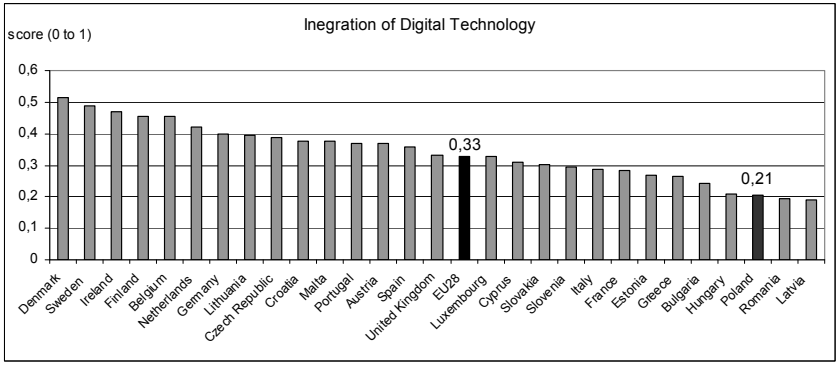
Inegration of Digital Technology
score (0 to 1)
0,6
0,5
0,4
0,3
0,2
0,1
0
0,33
0,21
Denmark
Sweden
Ireland
Finland
Belgium
Netherlands
Germany
Lithuania
Czech Republic
Croatia
Malta
Portugal
Austria
Spain
United Kingdom
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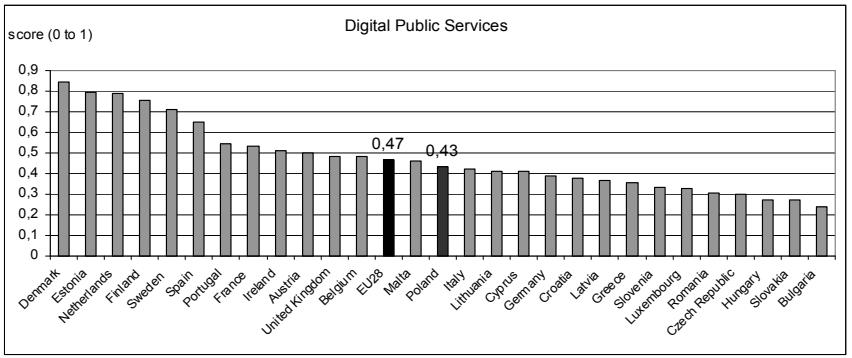

Figure 11.4. Poland and UE 28 countries - The Digital Economy and Society Index (DESI) - the five main dimensions in 2015 year
Source: own work based on the data available at: http://digital-agenda-data.eu

Over the course of last year (2015 to 2014), all EU countries showed a net improvement in their DESI overall score. However, some countries have improved more than others (data contained in Figure 11.3. and Figure 11.4.):

- Estonia was the country that made the most progress, improving its overall score from 0.5 to 0.55. Significant progress was also made by Greece (from 0.31 to 0.36), Bulgaria (from 0.3 to 0.34) and Ireland (from 0.49 to 0.53).
- Estonia improved the most in Connectivity (from 0.46 to 0.59), and in Human Capital (from 0.55 to 0.59).
- Greece improved the most in Connectivity (0.33 to 0.42) and Digital Public Services (0.27 to 0.35).
- Bulgaria improved significantly in Connectivity (0.39 to 0.47) and Integration of Digital Technology (from 0.18 to 0.24).
- Ireland improved in Connectivity (0.49 to 0.57) and in Use of Internet by citizens (0.38 to 0.44).
- In DESI 2015, Poland has an overall score of 0.39 and ranks 23rd out of the 28 EU Member States. Poland has improved its overall performance, across the main DESI dimensions and performed better in the majority of individual indicators. Poland performed best in Digital Public services (with a score of 0.43, Poland ranks 14th among EU countries). Digital Public Services is also the DESI indicator in which Poland performs best in terms of score and rank (also in the cluster of low-performance countries) -data contained in Figure 11.5.

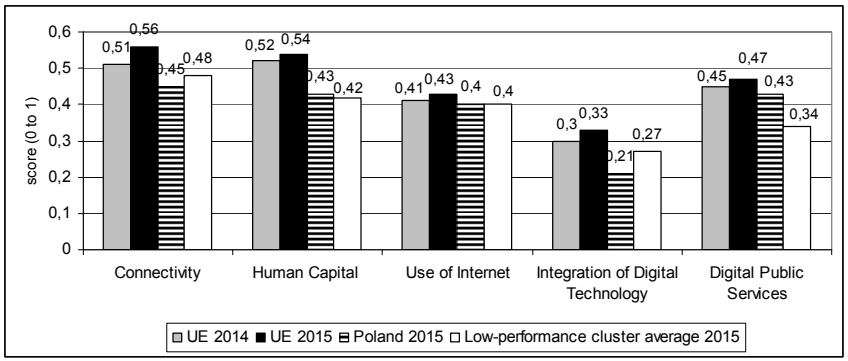

Figure 11.5. Poland, UE 28 and a countries with low performance - The Digital Economy and Society Index (DESI) – the five main dimensions in 2014 and 2015
Source: own work based on the data available at: http://ec.europa.eu/digital-agenda/en/scoreboard/poland#_ftn1

11.4. The computer games market as one of the forms of information and communication technology use

According to the available literature on this subject (Megapanel, 2014[27]) and the prior author's research (Warzecha, 2015a, 2015b) the modern means of communication are used most frequently by young people to check the e-mail, to surf the social networks, to listen to music and to play computer games. On the basis of conducted author's research it is possible to assert that over analyzed past 10 years (2003-2012) there was a significant improvement of the availability of Internet access for young people in Polish schools (Warzecha, Wójcik, 2015d).

In the modern world of omnipresent computers, tablets and mobile phones, the computer games market is a rapidly developing branch of entertainment industry which brings enormous profits.

[27] According to Megapanel research, in group of young people between 15 and 24 years old 87% of them makes use of Facebook, and in group of children between 7 and 14 years old it is 68%. Megapanel PBI/Gemius is all- Polish Internet research realized by Gemius company on the order of Polskie Badania Internetu company. http://www.pbi.org.pl/pl/aktualnosci/207/wyniki-megapanel-pbi-gemius-za-marzec-2014 (access 17.11.2015)

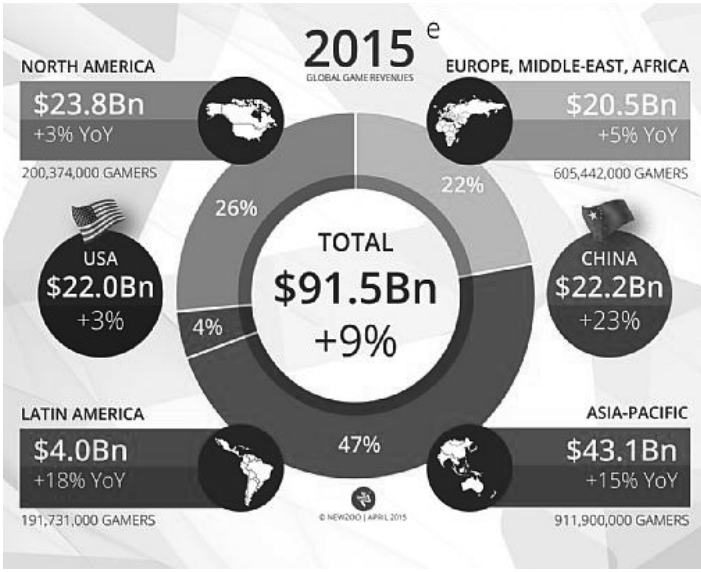

Figure 11.6. Income on games market in 2015- the division according to world's regions
Source: http//www.gry-online.pl.

From the Newzoo[28] research, in 2012 the value of global gaming market was estimated at 66,3 billion USD, while in 2015 (data from October 2015) the same market was estimated at 91,3 billion USD, therefore the income in this branch of industry has increased by 38% in the comparison to 2012. The most profitable region for gaming market in 2015 was the APAC region (Asia – Pacific), generating 41,6 billion USD of income. The first three most profitable countries for the computer games market are: China (22,2 billion USD), the United States (22 billion USD) and Japan (12,3 billion USD). Poland, among 100 researched countries, takes 19 position, and the second position in eastern Europe, right behind the Russian Federation. According to the available data, the value of Polish gaming market in 2015 was estimated at about 408 million USD. It means that our home games producers possess 0,98% of shares in the worldwide gaming market. It is forecasted that the incomes of Polish gaming branch should increase by 5,4% until 2018. It follows from the available data that 24,4 million of Polish people in 2015 were active users of the Internet, where 12,3 million used computer games. More than a half of

[28] Newzoo research company researches and analyzes the computer games market. The data accessible at: http://www.newzoo.com [access 9.11.2015].

gamers (52%) in Poland spent money on games, on average 63,74 USD per year, buying games legally in a traditional and digital way as well.

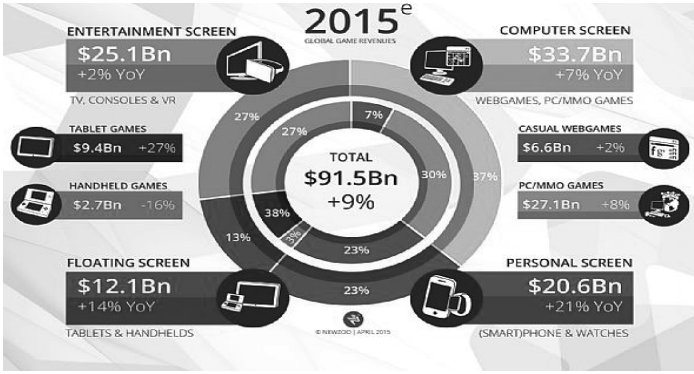

Figure 11.7. Income from the games depending on the gaming device platform used
Source: http://www.gry-online.pl.

Estimating the income depending on gaming devices used (the data contained in Figure 11.7.), the most significant income is made by players who use PC computers to play (the income is at the level of 33,7 billion USD), including casual games available at social networks such as: Facebook and browsers (6,6 billion USD) and the PC games of MMO[29] kind (both 27,1 billion USD). The second position is reserved for TV/ consoles, radio and television devices (25,1 billion USD), the third place is assigned for smartphones and smartwatches (20,6 billion USD) and the fourth position is for tablets and handhelds (12,1 billion USD)- in consecutive years the increase of income generated on playing games on tablets is forecasted.

In Poland, PC computer is used most frequently to play games (98% of players), 70% of players plays games on their mobile phones.

Tablets and portable consoles belong to popular devices and they are used by 20% of players. The greatest popularity in Poland goes to social and casual games (there are 12 million people playing and the most popular games are *Diamond Dash* and *Farmville*). Smartphones, which thanks to more and more specialized models and the widening of the broadband Internet coverage, are used by 5,6 million per-

[29] MMOG games (Massively Multiplayer Online Game) are so called multiplayer online games which are possible to be played by several players who are interconnected by Internet and LAN network. The main emphasis I the game is put on the plot and the development of characters. The player creates his own world and reaches levels. The characters connect and create clans. The game does not have the specific ending and the scenario (Taper, 2011).

sons, while desktop consoles of PS3 or Xbox 360 kind are used by 6,2 million players.

In Poland, 45% of all active players plays in MMO games, namely 6 million persons- from the western countries the higher percentage is only in Spain. One of the most popular games is World of Warcraft and World of Tanks (on 21st March 2013 there were 190541 of logged in players on one of the Russian servers). In Poland, 13% of MMO players spends more than 15 hours online per week.[30]

The world of computer games possesses many positive features (Kozak, 2011) e.g.: the games perfect the manual ability, reflex, hand-eye coordination, they develop imagination, they teach how to make decisions and they develop logical thinking, they help in making friends in virtual world. The computer games beside many positive features have also negative aspects: they trigger aggressive behavior in children and teenagers through visible violence acts which results in the loss of sensitivity to pain and suffering. From the author's own research it follows that for teenagers between 13 and 15 years old, for boys in particular, the most common form of entertainment is playing computer games (e.g.: network, battle or shooting games and games which take place in fantasy world). Frequently, they are inadequate to teenagers age (games available from 16 or 18 years old), they are full of aggression and violence and full of vulgar language (Warzecha, 2015c). In conclusion, it is worth mentioning that the sole action of using games should not be risky for the users as long as they use the games with moderation and common sense.

11.5 Conclusions

One of the factors having the influence on socio- economic development is a skillful gathering and making use of the information. The intense development of information and communication technologies (ICT) means that the access to information becomes easier and more common, but at the same time the lack of certain abilities and the possibility of using the modern technologies results in social digital exclusion. The information and communication technologies, the Internet in particular, are used in various spheres of socio- economic life. The dynamic development of ICT and the devices indispensable in using ICT (computers, laptop computers, tablets, mobiles phones) constitute simultaneously the opportunity for the development of society as well as the threat for this society. The ICT solutions are very

[30] The data available at:
http://polygamia.pl/Polygamia/1,107162,15330472,Gra_juz_13_4_miliona_Polakow__Jestesmy_pecetowa_potega.html [access: 16.11.2015]

attractive as regards the economic factors which grant great savings. They result from the possibility of integrated information distribution and information management, and the development of software contributes to significant reduction of costs in running a business. The researched countries in European Union vary significantly according to use of ICT. The EU countries, including Poland, are most similar when it comes to introduction and the use of broadband infrastructure, while the biggest differences are visible in the use of public digital services. Denmark, Sweden, the Netherlands and Finland are the world's digital leaders, the list is closed by such countries as: Romania, Bulgaria and Greece. Poland is in the group of countries with lowest level of digital development and the use of ICT (Poland takes 23rd place among EU countries- on the basis of DESI measure in 2015). Poland has improved its overall performance, across the main DESI dimensions and performed better in the majority of individual indicators. However, analyzing the gaming market and its income, Poland takes 2nd place among eastern countries and 19th place among 100 of researched countries of the world (the data from 2015).

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FIGURES

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