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FOREWORD

Entering the sixth year of regular publishing, we are happy to offer twelve new papers. **Capable Teacher** is the Study of the role of teachers as the most efficient human capital in the process of transition into the stable communities. **Export Concentration and Economic Growth: A Re-examination of the Empirical Evidence** examines how export concentration can be tailored towards promoting economic growth in Nigeria. **Export Led Growth in Libya: Empirical Investigation** shows relationship between exports and economic growth through time-series analysis. **An Assessment of Gross State Domestic Product at Constant (2011-12) Prices in India from 2011 to 2017** shows that high rate of GDP growth, in some parts of the country, was influenced not only by economic, dominantly financial, factors, but also by better climate situation. **Strategic Positioning of the Road Freight Transportation Companies: the Case of Croatia** analyses the key factors (macro environment and regulation, logistics strategies of the borderline industries, sources of creating value in road freight industry) that determine the process of companies’ market positioning. **The Peripheral Literary Myth as a Way to Cope with Workplace Flexibility** focuses on the intercultural, yet provincial, myths of “Lozdremensch” and “Silesian fate” that was developed in the belles-lettres, which focus of the experiences of the people who were living on Polish territory at the turn of nineteenth and twentieth century and later. **Contributions and Limits of the Loans Guarantee System for Small and Medium-Sized Enterprises (SMEs): Case of the Central Guarantee Fund (CCG)** tries to verify if the Guarantee Fund was able, through its two development plans (2009-2012 and 2013-2016), to ensure enough funds for the SMEs need. **Attractiveness of Large Oil Companies for External Investors in 2004-2013** examines the relationship between the investment attractiveness of the oil companies and the various indicators of their financial and economic performance. **Situated Sustainable Tourism: an Alternative for Emerging Countries**. This article is an attempt to apply the main results of the theory of “symbolic sites of belonging” in the field of tourism. The theory of symbolic sites is an approach that supports the idea of the relativity and mobility of economic phenomena. **Education and Professional Adaptation of Young Specialists on the Labor Market**.

The real problem of modern society is the adaptation of new young specialists for rapid advancement in the profession, which is obligatory with the concrete change of the conditions and requirements for education and production, which will be impossible without a comprehensive launch and actualization of this problem. **Development of Road Transport Logistic Infrastructure and Air Pollution in the Visegrad Group Countries**. The research has shown that modern logistic transport infrastructure may significantly decrease the pressing of transport on the environment. For this reason, the goal of this paper is to determine the level of a dynamic impact of transport infrastructure development on emission of pollution into the air, being a by-product of conventional fuels combustion in road transport. **Group Purchasing vs. Net Working Capital** investigates how the group purchases strategy have a positive impact on the company's profitability or the level of working capital, i.e., financial liquidity.

These papers offer a good insight into the different problems of social development in various political and cultural environments.

Editor
Marijan Cingula
Capable Teachers

On the Study of the Role of Capable Teachers as the Most Efficient Human Capital in the Process of Transition into the Stable Communities

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Abstract

Knowledge has lost its classical status and like the other social entities and realities of the present communities is changing rapidly. The classroom, a place in which the education and the relation between the teacher and student occurs, has gone under great and serious changes rapidly.

The information technology and the communication has changed all the current structure of the modern education and of course, these changes are not limited only to the education spaces and equipment. The today schools and students require empowered and new teachers more than anything else, who are learned and equipped with the latest achievements and findings of teaching technology.

The empowered teachers are considered to be the captains of knowledge age and the most valuable human capitals of the transition era of the communities, transition to stable democracy, to using wisdom and knowledge orientation, and social reforms to develop the stable communities.

Specialty, the new information, effective communications, the global awareness, technological knowledge, creativity, readiness to take risks, and using wisdom are of the features and requirements of the empowered teachers of age of the social stable reforms.

Teachers’ being effective and their methodological and structural creativity are not limited to the classroom and school and should be transferred and injected to the social and public spaces and arenas.

Certainly, applying the information technology and the modern equipment in education is an undeniable necessity rather than a luxurious choice. But the focal and key element of the transition and development to educational and social innovation are the empowered and wisdom-oriented teachers.

The schools and communities equipped with the empowered teachers direct the students and all the society to the road of learning, democracy, affinity and affection to each other with their moral and methodological influences.

Our students and children in the new era deserve learning before the professional and enthusiastic Teachers “Teachers of 21st Century” not just the adults that teach in the 21st century.

Keywords: Teacher, School, Empowered teacher, Democracy, Stable communities, New education

1. Introduction

Pursuant to drastic changes of the phenomena, the concepts change continually. Literacy is one of such concepts. In the recent years, along with emergence of modern technologies, the mentioned concept, like many others, has undergone dramatic changes. Nowadays it is a well-known fact that to further the knowledge, in addition to enjoying the reading and writing capabilities, we should have the ability to analyze the information and explore information structures, as well.
The main base for production and development of the knowledge is that education has a significant place in such a process. It is ultimately needed in the move towards production and dissemination of the knowledge, which finally leads to information society (Abu El-Haj and Rubin 2009).

In line with the above issues, computers have changed the human life in all its dimensions. The studies conducted with regard to development programs in many countries are representative of the focal role of the information and communication technology in such programs (Conderman 2003).

It, of course, is a taken-for-granted fact that no industrial change happens in the world unless it has its roots and starts with education. In fact, children compose 20 percent of our society now, but 100 percent of our future. What we do for our children as far as their education is concerned will show its result in the next 10-20 years and, thus, it is the education which truly forecasts the future society (Ajzen 1991).

The information and communication technology could be used as a powerful tool for promoting the quality and efficiency of education. It has the potential to change the traditional education methods in a way that presence in the classroom not to be a must. The children must get prepared for such a condition in the future. The needed changes may be imposed on traditional education methods having portrayed such a condition. So, the researchers of the present article try to consider the role and the importance of the capable teachers. In this part, the purpose of the research is mentioned (Elhoweris and Alsheikh 2006).

2. The Purpose of the Study

The main purpose of the study is that the researchers want to determine the fact that despite of the structural, cultural, economic, and political restriction of ideas, capable and creative teachers can apply useful methods in teaching and learning of the students in their classes. They may also open a new gate toward new wave in educational development.

3. Theoretical Background of the Study

Theoretically, the present study is in line with Skinner (1968) the technology of teaching; in which in his idea the application of operant conditioning to education is simple and direct. Teaching is the arrangement of contingencies of reinforcement under which students learn. They learn without teaching in their natural environments, but teachers arrange special contingencies which expedite learning, hastening the appearance of behaviour which would otherwise be acquired slowly or making sure of the appearance of behaviour which otherwise never occur.

According to (Drucker 1994) “Education will become the centre of the knowledge society, and the schools’ key motivation. What knowledge must everybody have? What is “quality” in learning and teaching? These will, of necessity, become central concerns of the knowledge society, and central political issues. In fact, the acquisition and distribution of formal knowledge may come to occupy the place in the politics of the knowledge society which the acquisition and distribution of property and income have occupied in our politics”. In the next part, research question of the study is referred.

4. Research Question of the Study

In line with the purpose of the study, the following research question was formulated:

- RQ1: To what extent today’s teachers’ can beneficially affect today’s modern technology and education?
- RQ2: In today’s world of knowledge, does information communication technology replace capable teachers?
5. Review of the Literature

5.1 World in the Age of Knowledge

If we look at the history, we will notice that the human society has experienced three main stages: the first stage was the agricultural stage for which the infrastructure was the land. The next stage which started along with industrial revolution was industrial stage for which the infrastructure was the factories. The stage in which we are living nowadays is the post-industrial stage for which the main infrastructure is the wisdom and knowledge. In the agricultural stage the main occupation of the people and predatory activities were mainly concerned with raw material and the people largely used their hands rather than the knowledge to work. In the industrial stage the raw material were needed to produce other products and people utilized both their hands and minds. The information was available to people in larger scale compared to the preceding stage. But in post-industrial stage, the main axis around which the life revolves is the knowledge. Nowadays, anything we wish to do has the knowledge at its base. In the present stage, the workforce is mainly composed of the skilled and expert people, and the handwork has largely reduced (Conderman 2003).

Production of the knowledge in the years 1975 to 1995 was about the same as it was for the whole human history up until 1975. In the mentioned twenty-year period, the knowledge in the world was doubled. Nowadays, every four year the knowledge in the world doubles, and of course it is anticipated that soon every two year the same will be doubled. This is how the human knowledge increases in progression manner. It is a fact that those who have more knowledge will have more capabilities. Thus, the students have to be empowered. We should provide them with knowledge so that they will depend on their own knowledge and will be more powerful. If we succeed in connecting them to the information resources, they will be able to overcome the problems and challenges, which they encounter in their life utilizing the knowledge they have accessed.

So, we need some type of systems and facilities, which allow us, bring up such people in the society (Mahat 2008).

5.2 The Features of a Knowledge-Based Society

Some of the features of a knowledge-based society are expertise, information and communication (Reynolds 2001). Furthermore, in studying the variables and factors affecting the knowledge-based model of development in any society, the role of education as one of the main principles cannot be ignored. In a knowledge-based society, creative thinking, information management and knowledge production is a fundamental principle (Matthews, 1980).

5.3 An Overview the Skills in 21st Century

The educational laboratory has recognized the skills in 21st century as being digital literacy, which includes pedagogical, visual, academic, technological, information, cultural literacy, and global awareness plus global knowledge, innovative thinking, thinking for higher ranks, logical reasoning, effective communication and high productivity.

<table>
<thead>
<tr>
<th>The Literacy in Digital Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedagogical Literacy</td>
</tr>
<tr>
<td>The ability to decode the meaning and explain</td>
</tr>
<tr>
<td>the beliefs in a series of communicational</td>
</tr>
<tr>
<td>tools (media), which includes using the images,</td>
</tr>
<tr>
<td>graphics, videos, diagrams, and maps</td>
</tr>
<tr>
<td>Academic Literacy</td>
</tr>
<tr>
<td>The ability to understand the theoretical and</td>
</tr>
<tr>
<td>practical dimensions of the experimental</td>
</tr>
<tr>
<td>sciences plus mathematics</td>
</tr>
<tr>
<td>Technological Literacy</td>
</tr>
<tr>
<td>Competence and competing in using the</td>
</tr>
<tr>
<td>communication and information technology</td>
</tr>
<tr>
<td>Information Literacy</td>
</tr>
<tr>
<td>The ability to find, assess, and use the</td>
</tr>
<tr>
<td>information through ICT</td>
</tr>
<tr>
<td>Cultural Literacy</td>
</tr>
<tr>
<td>The ability to understand the value of the</td>
</tr>
<tr>
<td>diversity of cultures</td>
</tr>
<tr>
<td>Global awareness</td>
</tr>
<tr>
<td>The ability to find out how the nations,</td>
</tr>
<tr>
<td>cultural centers, and societies communicate</td>
</tr>
<tr>
<td>with each other</td>
</tr>
</tbody>
</table>
Innovative Thinking

<table>
<thead>
<tr>
<th>Capacity of imitation</th>
<th>The ability to imitate and manage in a world full of complexity and communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intuition</td>
<td>Desire to learn</td>
</tr>
<tr>
<td>Innovation</td>
<td>The ability to employ the imagination to create something</td>
</tr>
<tr>
<td>Risk-taking</td>
<td>The ability to risk, and consider the possibilities</td>
</tr>
</tbody>
</table>

Effective Communication

<table>
<thead>
<tr>
<th>Team-work</th>
<th>The ability to work in a team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperation and individual or social communication and interaction</td>
<td>The ability to cooperate and interact with others</td>
</tr>
<tr>
<td>Being Responsible</td>
<td>Being responsible for the methods employed in ICT for the good of society</td>
</tr>
<tr>
<td>Mutual Communication</td>
<td>Competence in transferring, explaining, accessing, and understanding the information</td>
</tr>
</tbody>
</table>

High Productivity

| Prioritizing Capacity | Planning and managing the plans and projects to achieve the optimal results so that they could create optimal products |

Table 1. Brooks-Young, Susan (2007)

In the age of knowledge and wisdom, the most emphasis is on learning the innovation skills plus the skills to communicate with other and learn effectively. Noting the quantity of the knowledge produced every day and injected into the society, the learning needs to be ever lasting. It is said that: the academic life of an engineer who graduates from the university id about two years, while it previously reached about 10 to 15 years, necessitating them to keep their literacy up-to-date. The prevalent viewpoint in today’s world is that it is no more the age of trial and error to reach a goal, and one needs knowledge to learn the proper methods to achieve their goals. The students need to be prepared for living in such kind of society (Andrews, 2002).

5.4 Modern Methods of Education

For developing countries, ICT is a device to access and progress of training quality and communication potentially. It makes to promote and formulate the politics and widen the opportunities under learning the ways in training systems.

- **1-ICT, the Concept**

  ICT means information and communication technology and is known as a different set of tools and technological sources for saving, making, spreading and handling data. These technologies involve computer, internet, radio and TV broadcasting tools and phone. It has an important role in developing of the communities and so training is an experience based on learning to make rather changes individually. Learning is one of the main necessities of human under new methods contribution of data applications (stington, Janet and Wilde 1993).

- **2-ICT in Education**

  ICT turns the education atmosphere to a student-based atmosphere. Studies have shown that that a suitable ICT application increases space changes in content and training technique of 21st century well. Training of protected ICT has been promoted a long-term learning of student with a strong planning and provided new solutions for education. These new ways are given for the students by trainers theoretically (stington, Janet and Wilde 1993).
Table 2. A studying on the way of industrial community against data sample society

<table>
<thead>
<tr>
<th>Index</th>
<th>Traditional educating way</th>
<th>Educating way in appearance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>Actions by teachers</td>
<td>Actions by learner</td>
</tr>
<tr>
<td></td>
<td>Training for all of the class</td>
<td>Small grouping</td>
</tr>
<tr>
<td></td>
<td>Less difference in actions</td>
<td>Differed actions</td>
</tr>
<tr>
<td></td>
<td>Solution with a plan</td>
<td>Solution by learner</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooperation</td>
<td>Individual</td>
<td>As a team working</td>
</tr>
<tr>
<td></td>
<td>Uniform groups</td>
<td>Not uniform groups</td>
</tr>
<tr>
<td></td>
<td>Everybody works separately</td>
<td>Individual support</td>
</tr>
<tr>
<td>Innovation</td>
<td>Training of producer</td>
<td>High content training</td>
</tr>
<tr>
<td></td>
<td>Defined ways for problems</td>
<td>New ways against the problems</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coalition</td>
<td>Not joint among theory and practice</td>
<td>Uniform practices and theories</td>
</tr>
<tr>
<td></td>
<td>Great subjects based on regular shape</td>
<td>Relation among of subjects/There is a subject</td>
</tr>
<tr>
<td></td>
<td>Teachers one by one</td>
<td>Teachers’ teams</td>
</tr>
<tr>
<td>Assessment</td>
<td>By teachers’ thinking</td>
<td>With student attitudes</td>
</tr>
<tr>
<td></td>
<td>As a collection</td>
<td>Recognizing</td>
</tr>
</tbody>
</table>

5.5 Future Trends in Education and ICT

International organization of working and labor defines that educational need is a basic training with skills and long-term contribution for all people. With considering for the changes and corrections, ICT will improve the education. Horizons of ambitions are available with corrections and so ICT can remove the gaps in training. Today corrections had been depended on informed systems and it has not followed from traditional systems.

5.6 Future Schools

1. Mean schools

Mean class is one of the ICT products in training. At this way, training is held in a special place and then it is reused in forwarding to another place. Using mean training is caused to change a role of computer to a class.

2. Intelligent schools

These schools have a compacted nature physically, i.e., they have a great gap from traditional schools and they use from ICT in learning/learned services. It has a differed meaning with a mean school. Students attend in a school but as a mean school. It is expected that these schools would improve and promote the quality of training more.

It is a kind of physical school with intelligent controlling by computer-assisted system and networks and thus contents are designed electronically with intelligent assessment. The roles of teachers, managers and students are usually changing at this way.

5.7 Aims

1. Multi aspects growing for the students,
2. Individual promotions in abilities,
3. Scientific and experienced people training with technology,
4. To increase people attendance rate.

In a school, based on IT, mainly view is changed in training and thus training content is adopted among the students and teachers. A smooth procedure to be not implemented in this way and thus a student follows a special and defined procedure in training. Some of the responsible of a teacher are: planning and content providing for training, ICT controlling, supervisory role for learning and efficient training.

5.8 Developmental Advances in ICT and Stages

In 1997, Uganda, there was a training plan under protection of a world bank. Its aim was helping to the state to attain internet and world web for the schools. That plan had three elements: Correlation,
training and assessment. The plan got famous as soon at the world because of professional content for the progress and it was executed locally with on line services in five stages as follows:

- **Stage 0: computer knowledge:** the aim of this stage is to acquaintance with computer technology and helping to people at this case based on ICDL standard.
- **Stage 1:** acquaintance with internet for learning: the aim of this stage is learning basic concepts and necessary skills with new basic facilities (email projects making)
- **Stage 2:** acquaintance with remotely training system: the aim of this stage is learning remotely training by the structure in design and broadcasting the projects.
- **Stage 3:** the aim of this stage is Skills and how to make the practices innovatively with technology. Useful using from technology and its application in learning process.
- **Stage 4:** innovations: training technique, technology and development: the aim of this stage is to promote the skills and assessment procedure and innovative actions in the class with controlling process.

6. Answer to the Research Question of the Study

The results of the raised questions are as follow:

- **RQ1: To what extent today’s teachers can beneficially affect today’s modern technology and education?**

  According to the results of the studies stated in this article and the researchers view we can conclude that capable teachers by combining scientific and moral skills with creative management in their classes can pave the way for better education.

- **RQ2: In today’s world of knowledge, does information communication technology replace capable teachers?**

  Answer is certainly No. in fact ICT has made teacher’s role better with student role. ICT has a global view with a new role in a class. Teacher model is changed to student one and so a teacher is defined as a facilitator and trainer. (a guide person for the students) basic duty of a teacher is how to state a question and problem making to reach information and its assessment. Thus, teachers learn more about ICT, too. Some of them don’t like to use from ICT.

7. Discussion

**General Discussion**

Today modern technology has a deep effect on humans’ aspects. Training system is one of the exclusive systems at this case with information lines and sufficient knowledge to progress the aims.

Traditional ways couldn’t reply the recent needs, so flexible modern ways were replaced. Mean training using made time saving and expenses. It is a necessity factor not luxury option with cooperation and special minds and thoughts in this era. Formulating the structures in pre-service and in-service terms is very important to reach for the skills such as:

- computer knowledge;
- internet learning;
- technology and training plans;
- innovations of training.

In conclusion, the researchers believe that one of the main concerns of the today’s world is the world of knowledge and some aspects of these concerns back to structural equipment of the educational settings. Schools and other educational settings in the world even in less-developed countries are equipped with latest technologies in teaching and these equipment’s don’t guarantee the development of the knowledge. The key point here is the accountable and professional teachers’ duties that help improvement of the knowledge in educational settings and also pave the way for more progress in schools and other educational settings. The aforementioned progress required a
comprehensive system that lead to the training of the trainers that have their own qualifying characteristics. In addition, in line with the educational objectives the head of the departments, school principals, or teacher trainers provide workshops or INSET programs to motivate, motivated teachers and keep them updated.

REFERENCES

Export Led Growth in Libya Empirical Investigation

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Abstract

The aim of this paper is to examine the nexus between exports and economic growth in Libya through time-series analysis. The study investigates how exports have led to the overall economic development in Libya, indicating a higher bias on export lead economic growth hypotheses. The paper is divided into four sections. The first section is an introduction of the paper, the second section presents identification of economic growth and trade indicators, the third section presents the empirical results of research objective, and the fourth section concludes the paper.

Introduction

Libya is one of the middle-income countries in Africa that has for decades been using foreign trade as a vehicle of economic growth, as opposed to many other countries that have been using foreign aid for the same purpose. Foreign trade favours different types of exports and import that leads to different outcomes of economic growth. Libya, being a desert country cannot rely on primary goods to spur its economy. Primary goods are regarded as agricultural products, and other raw material and economic growth based on these products is regarded as primary-export led growth (Ashley, 1988).

For many countries in Africa, reliance on exports of raw materials and food remains principles means by which they generate resources, for economic growth. However, Libya cannot depend on these primary exports as a vehicle of economic development.

For Libya to increase the quality of life of its citizens, GDP and GDP’s socially acceptable distribution has to be achieved through macroeconomic policies. There are different approaches that this target can be achieved through, of which promotion of exports is one. In particular, in the post-1980 period, with the motivation provided by the Washington Consensus, economist and researchers are concerned with how promotion of exports may lead to higher economic growth and vice-versa (Berndt, 1991). Literature indicates that there are two hypotheses to this argument: one group of economist favours the export led economic growth while others are in favours of growth driven export hypotheses.

Though most of the existing evidence indicates that the relationship between economic growth and exports is bi-directional, the research presented in this chapter is concerned with export lead hypothesis in the case of Libya. The chapter attempts to investigate whether Libya’s export has led to the observed state of economic growth in the country. Therefore, the chapter does not deal directly with policies of export promotion such as subsidies and exchange rate depreciation. The bi-directional relationship between export and economic growth in many instances has been blamed for the indecision of many policy makers and researchers in developing countries. Governments are caught between open economies that promote international trade and concentrating on economic activities that would lead to higher international trade. To evidence this, it should be noted that the, rapid growth observed in China, and India is largely because of expansion of their exports. The successes witnessed in these two countries are because of open economies and access to technology through globalization of their economies. Export from a country leads the country to access international markets, which in turn demands increased production and efficient allocation of resources (Phillips and Perron, 1998).

Thus, trade invariably contributes to economic growth by way of generating long-term gains. Therefore, Libya is an interesting case study of export lead economic growth relationship.
Indicator of Economic Growth

GDP is the ever-controversial icon from the statistics world. It ignores values like the environment and social cohesion, it measures growth, but not destruction, and it measures income, but not equality.

Yet most people including businesses and governments swear by it. Value of goods and services produced in a country is subject to the statistics, which are not easy to gather. Moreover, many undocumented parts of the economy, such as the black market, make the calculations further difficult.

Calculation of GDP is a sophisticated procedure that must have the ability to include each and every value addition in the accounts from as small as a service of hair cut to as large as the production of aeroplanes. Each component is measured in terms of relative price in GDP.

Indicators of Trade

Exports and Imports

Exports and imports of a country are separately used as indicators of trade Libya international trade was highly limited to few goods prior to 1961 due to shortages in foreign earning exchanges.

The levels of goods and service imported and exported from Libya was not high before the discovery of the crude oil in the country. Volume of international trade was as low as $178 million US dollar in 1960 and translated to $2933 billion dollars by 1970. This was affected by the low level of human capital and other economic weakness in the economy. An increase in exportation of Libya crude oil to European countries in and establishment of the first ship part in 1961 was a turning point to the country’s international trade. The port aided the country in shipping large quantities of crude oil to European countries (Giovannetti, 1989).

The average value in 1970-2008 was about $1820$ million while the growth rate during that period is approximately equal to the rate of growth of exports during the same period, which amounted to 28.2%. This was ranging between the highest rate in 1974, which rose to 89%, and lowest in 1975, which fell to – 5%, coinciding with the rate of export growth, which confirms the that foreign trade growth rate effected by export growth. This was due to the oil boom and the economic recovery experienced by the country during this period, which was caused by the high revenues of oil exports.

This led to the rise in the value of exports, and its impact on the rising value of imports from consumer and capital goods needed for development programs in that period (Shaltout, 1987).

The last decade in the 20th century had many of turmoil in the global economy. This in turn negatively affected developing countries. It was at one time described as lost decade for developing countries, due to the accumulation of external debt with a very high international interest rates, and deterioration in terms of trade exchange. Technological progress in advanced countries led to deterioration of demand for raw materials. This period witnessed a decline in the rates of growth of international trade as a reaction to the low rate of growth in the value of exports and imports as shown by the decline in the value of foreign trade of 23953 million Dinar in 1981 to million 16415 in 1985, and continued to fall to 12541 billion in 1988. The average value during the period was 16747 million; the rate of growth of foreign trade during that period fell to – 9% in Libya.

In this period, the value of foreign trade in each year was lower from the previous year; the rate of growth in 1981 was about – 16.6% and – 5% and – 5 % in 1985 and 1988 respectively. This was due to the decline of exports caused by the low oil prices, which was caused by the global economic crisis.

To counteract these effects of economic crisis, Libyan policy makers followed the policy of austerity (Dakhil, and Yousef, 2002). The policy was aimed at influencing on the value of imports.

All these factors influenced negatively on the value of foreign trade and Libya’s growth rate during that period.

In the period 1989-2003, in response to fluctuations evident during that period in the value of exports and imports, the value of foreign trade fluctuated, with a general trend of the value of foreign trade rising to 18591 million in 1990, which was 12957 million in 1989, then drops to $16597 million
in 1991. This trend continued between high and low on average of $14614 million, it ends at $15393 million in 2002. The fluctuation was due to the non-stability of external and internal political and economic factors at the time. Most of it emanating from economic embargo imposed on Libya during the period as well as entry of the private sector in various economic fields, in addition to other reasons mentioned in earlier.

There has been considerable development in the value of international trade since the embargo was lifted. This period synchronizes with the suspension of economic sanctions imposed on Libya, which led to the recovery of both exports and imports. Exports during this period reached 28%, the imports growth rate was 35% leading to an increase in the rate of growth value of international trade during the same period to 30.8% and its ratio between 29%, 34% and 56% during the years 2003, 2005 and 2008 respectively. The value of foreign trade rose from 19902$ million in 2002 to 34994$ million in 2005, and continues to rise to 76042$ million in 2008.

**Data**

The research is a time-series analysis; therefore, the data is annual data. Economic activities have long term effects on each other, monthly or quarterly data might not capture the long-term effect.

This is a reason that annual data is used in the time-series analysis. Data is collected from 1963-2008. The period is chosen because in early 1960s, Libya entered into the regime of oil trade and sent the initial crude oil shipment to Europe. 2008-09 is an era of the global crisis and the reason to use data before 2009 is to exclude the effect of the global crisis on the estimates. The data is retrieved from the sourced in nominal terms that is in current prices. Inflation deflator is used to transform the data into real terms. Hence, the data used throughout the empirical process of the research is in real prices.

**Sources of Data**

Most of the data used is sourced from the Libyan Central Bank, International Monetary Fund, World Bank and other internet sources that are publicly available. The Central Bank of Libya provides excellent gross domestic product or national income of Libya since 1960s. The Wall Street Journal provides the financial analysis and data reports for Libya within the same period of investigations.

The census bureaus of Libya and its central statistic office provide private and public expenditure data for the Libyan economy. Economic growth data for Libya is available on a yearly basis. Data used in this study is obtained from various sources. The Central Bank of Libya has in its resources the World Development Indicator (WDI). All the data is either real or indexed. If real data is not available in real form, it is transformed from nominal to real using an indicator of inflation.

**Model Specification**

The objective in the section is for the relationship between trade and economic growth. Let $X_t$, $M_t$, and $Y_t$ are the indicators of exports, imports, and economic growth of Libya. Then a linear relationship between the three variables can be represented as:

$$ Y_t = f(X_t, M_t) $$

Equation 1 is a representation of economic growth as a linear function of exports and imports. If economic growth is considered an autoregressive process (a process, which depends on the past values of itself), then equation 1 might become:

$$ Y_t = f(X_t, M_t, Y_{t-1}) $$

Equations 1 and 2 can be written as regression equation as follows:

$$ Y_t = \alpha_1 + \beta_11X_t + \beta_12M_t + u_{1t} $$  

$$ Y_t = \alpha_2 + \beta_21X_t + \beta_22M_t + \beta_23Y_{t-1} + u_{2t} $$
Where, $\alpha_1$ and $\alpha_2$ are intercept values of the indicator of economic growth in equation 3 and 4 respectively. $\beta_{11}$ and $\beta_{21}$ measure the effect of exports of Libya and $\beta_{12}$ and $\beta_{22}$ measure the effect of imports of Libya on the economic growth of the country in equation 3 and 4 respectively. $\beta_{23}$ in equation 4 measures the effect of economic growth of Libya in the previous on economic growth of Libya in the current year. $u_{1t}$ and $u_{2t}$ are the error terms of the two regression equations, these error terms capture the effect of all those factors that are not included in the equations 3 and 4. $X$ and $M$ are measures of exports and imports.

Mythology

**Augmented Dickey Fuller test (Test of Stationary Series)**

We perform a unit root test on each variable in our model using the Augmented Dickey-Fuller (ADF) test. ADF test is applied on each time series. Let $A_t$ be a time series, and then following hypothesis can be formulated to test the existence of unit root in $Y_t$.

$$\Delta A_t = \alpha + \gamma t + \beta A_{t-1} - \theta_1 \Delta A_{t-1} + \mu_t$$

$H_0$: $(\alpha, \gamma, \beta) = (0, 0)$, $H_1$: $(\alpha, \gamma, \beta) \neq (0, 0)$

The joint hypothesis $\gamma = \beta = 0$ is tested performing F-test. If the null hypothesis is not rejected, the next step is the test $\beta = 0$ using $t$-statistics. Following is the estimation equation,

$$\Delta A_t = \alpha + \gamma t + \beta A_{t-1} - \theta_1 \Delta A_{t-1} + \mu_t$$

$H_0$: $(\alpha, \beta) = (0, 0)$, $H_1$: $(\alpha, \beta) \neq (0, 0)$

Rejection of $H_0$ requires that series contain a unit root and should contain a drift term. The above-described form uses the values of $Y$ and hence it is called the level form. If $Y$ is replaced by its initial difference or changed difference with evidence of unit roots, the series are said to be integrated of order one $I(1)$, meaning that they must be modelled in first difference ($\Delta A_t = \Delta (at - A_{t-1})$) to make them stationary. A time series is stationary if it does not change overtime, which implies that its values have constant variability. This enables us to avoid the problems of spurious regressions that are associated with non-stationary time series models.

After the confirmation that unit root vanishes at first difference form or second difference form, the series a used to find out long-run relationship. As a non-stationary series, even if not related in the short run, may be related in the long run to the other series. By the short run or long run, it is meant that for annual time series, the complete effect of independent variables on the dependent variable can occur within one year or in more than one year respectively. Johansen’s Co integration Test is used to determine the long-run relationship between the variables.

**Johansen’s Co integration Test**

After testing for unit roots, we proceed to test for co integration (long run relationship between variables). This study uses Johansen and Juselius’s (1990) definition of co integration. Johansen’s co integration procedure was used to test for the possibility of at least one cointegrating vector between variables in the models. Co integration between two series depicts existence of a significant relationship between two variables. Though Ordinary Least Square (OLS) method also does the same, co integration is useful where the series are non-stationary at level form while OLS estimates are spurious in situation. Let $A$ and $B$ be two non-stationary time series such that their difference with lagged term is stationary.

$$A_t = \alpha + \beta B_t + \mu_t \quad (20)$$

Where, $\mu$ is the residual term. If $\mu$ is stationary, then $A$ and $B$ are cointegrated. For this purpose, ADF test is employed on the residual term. Remember that in OLS, residual terms are assumed to be white noise, that is their mean is zero and variance is constant. Mathematically,

$$E(\mu) = 0, \quad Var(\mu) = \sigma$$

Also, the error terms are assumed to follow a normal distribution. Symbolically,

$$\mu \sim N(0, \sigma)$$
Therefore, t-statistics is not appropriate as it uses the values of mean and standard deviation. Software packages contain a built-in program to test co integration using Trace statistics and Max Eigen statistics. To enhance further clarification of the change in the dependent variable, Vector Error Correction Model is useful.

**Vector Error Correction Model (VECM)**

Once it is confirmed that the dependent variable is affected by the independent variables in the long run, the changes that occur in the dependent variable in the short run as well as in the long run can be determined by VECM. The result of a VECM depicts whether the dependent variable is above the equilibrium level or below the equilibrium-level and how much of the equilibrium level is achieved in one year. By equilibrium level, it is meant that the value of dependent variable includes the complete effect of the independent variable. In this way, it can be described that how much time is required for a time series variable to adjust in the long run. Let A and B are two time-series with co integration between them tested via following co integration equations:

\[
A_t = \alpha + \beta B_t + \bar{E}A_t \quad (21)
\]

\[
B_t = \theta + \lambda A_t + \bar{E}B_t \quad (22)
\]

Where, \( \alpha \) and \( \theta \) are intercept values of \( A \) and \( B \) respectively. \( \beta \) is the effect of \( B \) on \( A \) and \( \lambda \) is the effect of \( A \) on \( B \). \( \bar{E}A \) and \( \bar{E}B \) are the error term of equations 21 and 22 respectively.

Equation 21 and 22 together form a model whose Vector Error Correction Model (VECM) is as follows consisting of two equations:

\[
\Delta A_t = \phi + \psi_1 \Delta B_{t-1} + \psi_2 E_{A_{t-1}} + \mu_t \quad (23)
\]

\[
\Delta B_t = \theta + \lambda_1 \Delta A_{t-1} + \lambda_2 E_{B_{t-1}} + \nu_t \quad (24)
\]

The symbol \( \Delta \) represents the difference of the corresponding variable from its lagged value. \( \phi \) and \( \theta \) are the intercept values of \( \Delta A \) and \( \Delta B \) respectively. \( \psi_1 \) is the effect of the change in \( B \) in the previous year on the change in \( A \) in the current year and \( \lambda_1 \) is the effect of the change in \( A \) in the previous year on the change in \( B \) in the current year. \( E_{A_{t-1}} \) and \( E_{B_{t-1}} \) are the lagged values of the error terms in equation 19 and 20 respectively. They are called error correction terms with coefficients \( \psi_2 \) and \( \lambda_2 \).

According to Robinson (1992), “the error correction term captures the long run relationship, short run dynamics is provided by the lagged values of the difference terms”. Using these methods of investigation enables the researcher to prove causality advanced by the granger causality test. The test uses the t statistics and F statistics to test the lagged values of each explanatory variables being investigated. In order to accept the null hypothesis, t-test for the lagged error correction coefficients is to be statistically significant for long term due to the bidirectional causation between the variables (Caner and Kilian, 2001). A significant coefficient of the error correction term implies disequilibrium in the value of the dependent variables. If \( \psi_2 \) has a negative sign, it implies \( A \) is below the equilibrium level, and a positive sign implies that \( A \) is above the equilibrium level. The magnitude of \( \psi_2 \) shows how much of the value of \( A \) is adjusted in one year towards the equilibrium level. Similar association is defined between \( \lambda_2 \) and \( B \).

**Empirical Results**

This section presents the results of the empirical estimation. As an indicator of trade, data on Libya’s total annual export and total annual imports from 1963 to 2008 is collected. GDP of Libya is taken as the indicator of economic growth. Following figure illustrates line graph of the three variables.
In the above figure, graph of Libya’s export, import, and economic growth followed a similar pattern from 1960s to 1980s. The three variables show a drastic increase in their values after 1970. The level of Libya’s export, import, and GDP remained high, with fluctuations, till 1980. After 1980, the three variables declined with a high rate until 1985 and then with low rate until 2000. After 2000, values of the three variables start to increase, reaching at the level of that in 1975. Exports of Libya remained higher throughout the period 1963-2008 but the gap between exports and imports start to reduce after 1985 until 1988. Little changes are observed in imports and the reason of reduced the gap between imports and exports is the decline in Libya’s exports. Libya has an average annual GDP of $39.8 billion in the period 1963-2008. In the same period, average annual value of Libya’s exports and imports is $19.9 billion and $ 8.58 billion respectively. Maximum GDP of Libya is observed to be $105 billion in 1980, soon after Gaddafi took charge in 1970. Minimum GDP of Libya during 1963 and 2008 is observed to be $7.11 billion in 1963. That was the time when Oil field and Oil terminal operations started in Libya and lasted till 1966. Exports and imports of Libya reached the maximum level of $62.6 billion in 1980 and $23.5 billion in 2008 respectively. Imports of Libya are at an increasing trend this is one reason that the highest level of exports during 1963-2008 is observed in 2008.

In section 4.7.3, Augmented Dickey Fuller test is introduced to test stationary series. The test is applied here on GDP, exports, and imports. Following table summarises the result of ADF test.

| Table 5.1 Intermediate ADF Test Results Series: Y, X, M |
|----------------|----------------|----------------|
| Series | Level From | First Difference Form |
|       | Prob.     | Unit Root | Prob.     | Unit Root |
| Y     | 0.5746    | Yes       | 0.0000    | No        |
| X     | 0.6478    | Yes       | 0.0000    | No        |
| M     | 0.6428    | Yes       | 0.0089    | No        |

First, ADF test is employed on the data at level form (without taking any difference) and p-values of the test statistics is calculated to be greater than 0.1 for each of the series of GDP, exports and imports. This shows that there exists unit root in the three series and the series are non-stationary.

Then, ADF test is applied on the first difference (current value subtracted from the previous value) of the series. At first different form, p-value of the each of the series of GDP, exports and imports is less than 0.01. This implies that, there is no unit root in the series at first difference form and at firs difference form, the three series are stationary. As the series, are stationary at difference form, co
integration among the variables can be tested. Johansen co integration is tested using Trace and Max Eigen statistics. Following are the output of the co integration test.

Table 5.2 Unrestricted Co integration Rank Test (Trace) Series: Y, X, M

<table>
<thead>
<tr>
<th>Hypothesized N. of CE(s)</th>
<th>Eigen value</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>0.345285</td>
<td>31.82515</td>
<td>29.79707</td>
<td>0.0288</td>
</tr>
<tr>
<td>Atmost 1</td>
<td>0.206660</td>
<td>13.18871</td>
<td>15.49471</td>
<td>0.1081</td>
</tr>
<tr>
<td>Atmost 2</td>
<td>0.065964</td>
<td>3.002559</td>
<td>3.841466</td>
<td>0.0831</td>
</tr>
</tbody>
</table>

Table 5.3 Unrestricted Co integration Rank Test (Maximum Eigenvalue) Series: Y, X, M

<table>
<thead>
<tr>
<th>Hypothesized N. of CE(s)</th>
<th>Eigen value</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None*</td>
<td>0.345285</td>
<td>18.63644</td>
<td>21.13162</td>
<td>0.1078</td>
</tr>
<tr>
<td>Atmost 1</td>
<td>0.206660</td>
<td>10.18615</td>
<td>14.26460</td>
<td>0.2000</td>
</tr>
<tr>
<td>Atmost 2</td>
<td>0.065964</td>
<td>3.002559</td>
<td>3.841466</td>
<td>0.0831</td>
</tr>
</tbody>
</table>

According to the results of co integration test using trace statistics, the hypothesis of no-co integration is rejected while the hypothesis of at most one co integration is not rejected. This suggests that there exist one co integration relationship among the three series. However, the result of co integration test using Max Eigen statistics shows that the hypothesis of no co integration is not rejected as the Eigen value is less than the critical value. Therefore, there is no co integration among the variables. This result is same as that found by Abou-Stait (2005) for the case of Egypt. No co integration among Libya’s GDP, exports, and imports shows that although the difference of these series with previous values is stationary, there is not linear relationship among them in the long run.

The cointegration equations, uses lagged values of series in the expression. Multiple equations incorporating lagged terms can be formed taking each variable as dependent. Such a model can be formed as either VECM (Vector Error Correction Method) or VAR (Vector Autoregressive Method) as described in Chapter 4. In the presence of co integration, VECM is used otherwise VAR model is used to evaluate temporal dependence in a multivariate time series. Following is the output of the VAR model.

Table 5.4 Vector Auto regression Estimates Series: Y, X, M

<table>
<thead>
<tr>
<th></th>
<th>Y</th>
<th>X</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y(-1)</td>
<td>-0.488275</td>
<td>-0.841194*</td>
<td>-0.128477</td>
</tr>
<tr>
<td></td>
<td>(0.33342)</td>
<td>(0.26711)</td>
<td>(0.07211)</td>
</tr>
<tr>
<td></td>
<td>[-1.46443]</td>
<td>[-3.14929]</td>
<td>[-1.78168]</td>
</tr>
<tr>
<td>Y(-2)</td>
<td>0.734647*</td>
<td>0.314569</td>
<td>0.066116</td>
</tr>
<tr>
<td></td>
<td>(0.34252)</td>
<td>(0.27439)</td>
<td>(0.07408)</td>
</tr>
<tr>
<td></td>
<td>[2.14485]</td>
<td>[1.14642]</td>
<td>[0.89253]</td>
</tr>
<tr>
<td>X(-1)</td>
<td>1.479536*</td>
<td>1.420975*</td>
<td>0.332061*</td>
</tr>
<tr>
<td></td>
<td>(0.43095)</td>
<td>(0.34524)</td>
<td>(0.09320)</td>
</tr>
<tr>
<td></td>
<td>[3.43316]</td>
<td>[4.11593]</td>
<td>[3.56278]</td>
</tr>
<tr>
<td>X(-2)</td>
<td>-0.920781*</td>
<td>-0.369983</td>
<td>-0.085895</td>
</tr>
<tr>
<td></td>
<td>(0.41690)</td>
<td>(0.33398)</td>
<td>(0.09016)</td>
</tr>
<tr>
<td></td>
<td>[-2.20863]</td>
<td>[-1.10780]</td>
<td>[-0.95266]</td>
</tr>
<tr>
<td>M(-1)</td>
<td>2.624424*</td>
<td>2.430216*</td>
<td>0.989338*</td>
</tr>
<tr>
<td></td>
<td>(0.94184)</td>
<td>(0.75451)</td>
<td>(0.20369)</td>
</tr>
<tr>
<td></td>
<td>[2.78648]</td>
<td>[3.22091]</td>
<td>[4.85699]</td>
</tr>
<tr>
<td>M(-2)</td>
<td>-1.035737</td>
<td>-0.624907</td>
<td>-0.386945</td>
</tr>
<tr>
<td></td>
<td>(0.91443)</td>
<td>(0.73255)</td>
<td>(0.19777)</td>
</tr>
<tr>
<td></td>
<td>[-1.13265]</td>
<td>[-0.85305]</td>
<td>[-1.95659]</td>
</tr>
</tbody>
</table>
Values of R-squared and adjusted R-squared of each of the three autoregressive-models is greater than 0.8 and F-statistics are significant which shows that the model is overall significant. Individual significance of the variables and the lagged terms show that sign of the coefficient of the first lag is opposite of that of the second lag. GDP of Libya is affected positively and significantly by the second lag term of GDP. The first lag of exports has a positive and significant effect on Libya’s GDP while the second lag of exports has a negative and significant effect on the GDP. The first lag of imports has a positive and significant effect on GDP while the effect of the second lag of imports on GDP is negative and insignificant. In the equation where Libya’s export is taken as the dependent variable, effect of the first lag of GDP on exports is negative and insignificant while the effect of the second lag of GDP on exports is positive and significant.

Exports is positively and significantly affected by its first lag while negatively and insignificantly affected by the second lag. Effect of imports on exports is positive and significant for the first lag while negative and insignificant for the second lag of imports. Equation of Libya’s imports shows that, in the long run, Libya’s GDP has no significant effect on the imports. Exports in the previous year have a positive and significant effect on the imports while in the second previous year; the effect becomes negative and insignificant. Imports of Libya in the current year are significantly affected by its value in the previous year. Cause and effect relationship between the three variables are tested via Granger Causality. If the test-statistic is significant, it supports the notion that the dependent variable granger causes the excluded variable. Output is given in the following table.

**Table 5.5 VAR Granger Causality/Block Exogeneity Wald Tests Series: Y, X, M**

<table>
<thead>
<tr>
<th>Dependent variable: Y</th>
<th>Excluded</th>
<th>Chi-sq</th>
<th>df</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>11.86094</td>
<td>2</td>
<td>0.0027</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>7.781673</td>
<td>2</td>
<td>0.0204</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>28.37540</td>
<td>4</td>
<td>0.0000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable: X</th>
<th>Excluded</th>
<th>Chi-sq</th>
<th>df</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>13.01579</td>
<td>2</td>
<td>0.0015</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>10.48841</td>
<td>2</td>
<td>0.0053</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>21.05661</td>
<td>4</td>
<td>0.0003</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent variable: M</th>
<th>Excluded</th>
<th>Chi-sq</th>
<th>df</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>3.575131</td>
<td>2</td>
<td>0.1674</td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>14.54069</td>
<td>2</td>
<td>0.0007</td>
<td></td>
</tr>
<tr>
<td>All</td>
<td>23.22073</td>
<td>4</td>
<td>0.0001</td>
<td></td>
</tr>
</tbody>
</table>

The output of VAR Granger Causality/Block Exogeneity Wald test shows that the GDP of Libya granger causes exports and imports. Even if economic factors other than GDP keep changing, any change in GDP will have a positive effect on both the exports and imports of GDP. As the measure of economic growth, GDP includes value of total production in Libya, increased level production affects the level of exports directly. Also, GDP is a measure of income, high income of a country results in increased purchases from other nations, given the microeconomic concept of income effect.
However, the concept of substitution effect results in decrease in purchase given an increase in the income. According to both concepts, the effect of Libya’s income change on the country’s imports is significant. Results also show that the Exports of Libya Granger causes GDP and imports. This is because exports earnings contribute the value of GDP directly as income. Mostly, Libya is involved in bilateral trade of mutual benefits with the major trading partners. Therefore, an increase in exports with the partner results in increased imports from the trading country. Results also indicate that imports of Libya Granger cause exports but not GDP. The reason behind exports causing imports is also the reason behind imports causing exports. Hence, lagged values of Libya’s import cannot be used to predict the country’s GDP.

Conclusion

This paper identified the association between Libya’s economic growth and trade. International trade is indicated via exports and imports as the indicator trade openness is not found to have significant correlation with economic growth. Results showed that exports affect income of Libya significantly unlike imports. Moreover, the cause and effect relationship between imports and economic growth of Libya is not significant. On the other hand, cause and effect relationship between exports and economic growth of Libya is significant. Policymakers can use exports of the country to predict and plan for economic growth of Libya.

REFERENCES


Group Purchasing Vs. Net Working Capital

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Abstract

Net working capital is a measure of financial security of a company. It is closely related to financial liquidity as its management is the management of current assets and current liabilities. Group purchases have a major impact on inventory management, short-term receivables and short-term liabilities as well as cash. Group purchasing is used in multi-stakeholder organizations such as group purchasing organizations (GPOs). Depending on the selected strategy of business management, group purchases have a positive impact on the company’s profitability or the level of working capital, i.e., financial liquidity. Trade credit has a large role in shaping the level of working capital, which directly affects short-term receivables, short-term liabilities and the level of cash. In group purchasing organizations the managers, by organizing group purchases, can directly influence the level and structure of individual elements that build the level of net working capital.

Keywords: group purchases, working capital, strategies

Introduction

The basis for building a competitive advantage by a company is financial security. Enterprises should have cash at all times to repay their current liabilities. In general, there are situations in enterprises when they are missing or when their level is too high, i.e., over-liquidity occurs. Both these situations are disadvantageous for enterprises. Lack of cash may cause the production or sales to be stopped, which means large losses for the company. Unnecessary costs arise, the company may lose customers. Continuous cash shortages hamper the day-to-day operation of the company as well as the decision-making process. There are hold-ups in various company units, nervousness among employees and management. The company logistics ceases to function, the unit operates inefficiently, costs increase in virtually every area. If there is an excess of liquidity in an enterprise, individual elements influencing this high level of net working capital should be analyzed in detail. Managers should pay attention to the working capital management strategies in the enterprise as it is a buffer protecting the enterprise against loss of financial liquidity. The functioning of multi-entity organizations such as group purchasing organizations has a large impact on the level of net working capital. Enterprises operating within GPOs carry out joint transactions, which significantly affects the level of net working capital. Their clear impact is visible in the branch group purchasing organizations.

Working Capital

Net working capital can be defined as the difference between current assets and short-term liabilities. In the literature, terms such as “net current assets” and “current capital” are often used to determine “working capital” [1]. Working capital as the individual elements of current assets “work” in the sense that they earn money [2]. Another definition defines the net working capital as a part of the long-term capital of the company that finances current assets [3]. It can be positive, negative or theoretically neutral. However, the operational security of a company is ensured by the positive net
working capital. The positive working capital exists in the situation when current assets are higher than current liabilities.

Positive working capital is a sign of having financial liquidity. Current assets are financed by short-term liabilities and by fixed capital. And the part of the fixed capital that finances current assets is called positive net working capital.

The company may also have a negative net working capital. It appears in a situation where short-term liabilities exceed current assets.

In this situation current assets are financed by short-term liabilities. There is, therefore, a risk of payment closures. This institution is disadvantageous for a company and the solution to this problem may be the use of compensation deals within the group purchasing organization. Compensation deals are the ones that support the management of financial liquidity [4]. The company managers should run their organization in such a way that the positive net working capital appears. In multi-entity organizations there are group purchases that have a large impact on the structure and level of current assets and the level of current liabilities, which shape the level of net working capital.

**Group Purchasing Organization**

First Group Purchasing Organizations (GPO) appeared in the US in 1950 [5]. A group purchasing organization can be defined as a group of cooperating companies that jointly controls and improves material, information and monetary flows from suppliers to final recipients. GPOs have a positive impact on the quality of service or goods sold. Typical defects are organizational costs and loss of flexibility [6]. To be successful a GPO must be able to foster and maintain the commitment of its members [7]. Participants in such a system form a separate central unit whose main task is to achieve the objectives set by enterprises operating in a given system [8]. The organizational chart of the GPO is shown in the figure below.
The group purchasing organization is thus a typical multi-entity organization managed by the central unit. The relationships between individual participants in the group have a large impact on the success of the purchasing group, and companies should trust each other [9]. The purchasing group can be described as powerful buyers. They meet important criteria characteristic for powerful buyers [10]:

- They buy large quantities,
- Products purchased in the sector are standardized,
- Products purchased in a given sector by a group of buyers constitute a significant part of its costs.

When analyzing the functioning of GPOs a division should be made due to the integrating unit, i.e. the Internet and traditional ones. The next most important division is the division into one and multi-branches groups. The details are shown in Fig. 1.
The division into multi-branch and branch GPOs is very important from the point of view of net working capital management. Functioning within purchasing groups is based on joint purchases, i.e., cooperation between all participants of the purchasing group. The central unit is responsible for the organization of group purchases. Its task is to negotiate the best terms of the deal for the purchasing group. The greater the scale effect, the greater the purchasing power, so it is important that all participants in the group are interested in the same commodity or material. Therefore, the stronger scale effect is obtained in the branch GPOs where there are no divisions into industries and organization of separate purchases for individual assortments. It is easier for the central unit to manage a GPO when it trades with a small group of producers. Enterprises operating in the purchasing group through group purchases obtain low prices and attractive trade credit. A favorable price and the trade credit give a lot of management opportunities in the field of working capital management.

**Strategies of Group Purchasing**

Group purchases are the basis for the functioning of GPOs. Companies operating within the groups, if they do not use this form of organizing purchases, incur unnecessary costs. They should be removed from the organization as they probably use third-party offers, which is forbidden in purchasing groups. Functioning within GPOs is based on purchases made at the central unit of suppliers. The choice of suppliers must be accepted by the supervisory board of the central unit, that is very often by the owners of individual companies operating within GPOs.

Group purchasing strategies should be divided into two types:
- **Trade credit strategies**;
- **Discount strategies**.

The trade credit strategy occurs when the central unit of the group receives, in addition to a favorable price, a long period to settle the obligation as a part of negotiations with the producer. So there is a long time to repay the obligations, i.e. the merchant’s loan. In the case of working capital management, this type of transaction will allow companies to turn over cash until the liabilities are settled. Long buy credit gives an opportunity to lend customers longer, which can increase sales because the company offers attractive trade credits. The impact of the trade credit strategy on the most important elements constituting working capital is presented in Table 1.

**Table 1. The impact of the trade credit strategy on current assets and current liabilities**

<table>
<thead>
<tr>
<th>Current assets and current liabilities</th>
<th>The impact of the trade credit strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocks</td>
<td>Growth</td>
</tr>
<tr>
<td>Receivables from recipients</td>
<td>Unchanged</td>
</tr>
<tr>
<td>Cash in the cash box and on bank account</td>
<td>Unchanged</td>
</tr>
<tr>
<td>Liabilities for suppliers.</td>
<td>Growth</td>
</tr>
</tbody>
</table>

*Source: own research*

The trade credit strategy positively affects the level of net working capital because a company has stocks for which it has not paid, which it can sell and increase the level of cash. Thus, the most liquid elements of current assets, i.e., cash at hand and bank accounts or receivables from customers increase. When selling goods (stocks), a margin is calculated, which results in an increase in cash or receivables in relation to the amount of liabilities to suppliers. The level of net working capital, therefore, increases. In the case of a split payment operation, this strategy strengthens the operational security of enterprises because the payment of net receivables follows earlier, which allows the collection of funds for the payment of gross liabilities. Therefore, it is a group purchase strategy that is secure but not very profitable unless the company, using the supplier in an effective way, uses cash.

The discount strategy is to use an additional rebate that the company receives from the producer for early payment of obligations. This strategy, therefore, has the greatest impact on costs because the unit receives from the producer a low price for the goods it acquires. While assessing the level of net working capital one can observe a decrease in the level of cash, as well as the level of current...
liabilities. In the case of this strategy an outflow of cash from their impact may be faster. The application of this strategy is possible in enterprises that have free financial resources. The impact of the discount strategy on the most important elements forming working capital is presented in Table 2.

**Table 2. The impact of the discount strategy on current assets and current liabilities**

<table>
<thead>
<tr>
<th>Current assets and current liabilities</th>
<th>The impact of the discount strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocks</td>
<td>Growth</td>
</tr>
<tr>
<td>Receivables from recipients</td>
<td>Unchanged</td>
</tr>
<tr>
<td>Cash in a cash box and on bank account</td>
<td>Decline</td>
</tr>
<tr>
<td>Liabilities for suppliers</td>
<td>Decline</td>
</tr>
</tbody>
</table>

*Source: own research*

The discount strategy tends to reduce the financial liquidity. In the enterprise the level of cash is lowered, inventories grow and current liabilities decrease. The increase in inventories and the decrease in cash have a negative impact on financial liquidity. Payment of gross amounts and the emergence of stocks increases the need for working capital. Therefore, it is a very profitable strategy, but it requires a solid financial basis that will secure the financial gap that arises in such group purchases.

**Conclusions**

Operation within group purchasing organizations is based on joint group purchases. Depending on the financial situation of the individual and the purchasing group’s policy, the enterprise has a choice of two group purchasing strategies. If there are financial resources available in the unit the discount strategies should be used, which positively affects the individual’s profitability. It raises profitability ratios in the enterprise, but it decreases financial liquidity, there is an outflow of cash, which also causes a drop in the level of net working capital. If enterprises decide to use the trade credit strategy then the level of net working capital increases. The increase in the level of the net working capital raises financial liquidity ratios. Trade credit strategy is a tool that improves the liquidity of enterprises.

In the branch group purchasing organizations a discount strategy is generally used. In the surveyed business enterprises in 2015 high financial liquidity was observed. The details are presented in Table 3.

**Table 3. Financial liquidity ratios in enterprises operating in the branch group purchasing organization**

<table>
<thead>
<tr>
<th>Enterprise</th>
<th>Current financial liquidity ratio</th>
<th>Quick liquidity ratio</th>
<th>Financial liquidity ratio</th>
<th>Level of net working capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise 1</td>
<td>1,9</td>
<td>1,2</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 2</td>
<td>7</td>
<td>3,8</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 3</td>
<td>1,8</td>
<td>0,9</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 4</td>
<td>15,7</td>
<td>8,2</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 5</td>
<td>1,9</td>
<td>0,9</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 6</td>
<td>8,4</td>
<td>5,6</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 7</td>
<td>3,6</td>
<td>2,1</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 8</td>
<td>1,4</td>
<td>0,7</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 9</td>
<td>9,3</td>
<td>6,8</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 10</td>
<td>1,9</td>
<td>1</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 11</td>
<td>1,4</td>
<td>0,8</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 12</td>
<td>3,5</td>
<td>2,1</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 13</td>
<td>1,5</td>
<td>1</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 14</td>
<td>1,6</td>
<td>0,9</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 15</td>
<td>2,5</td>
<td>1,4</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 16</td>
<td>1,3</td>
<td>0,6</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 17</td>
<td>1,2</td>
<td>0,7</td>
<td>Positive</td>
<td></td>
</tr>
<tr>
<td>Enterprise 18</td>
<td>2</td>
<td>1,2</td>
<td>Positive</td>
<td></td>
</tr>
</tbody>
</table>

28
Each of the units surveyed has a positive net working capital. Financial liquidity ratios are at a high level. These results indicate the possibility of discount strategy while organizing group purchases. In the units surveyed the reduction of working capital will not have a negative impact on working capital. In enterprises the profitability of sales will improve, which is very important for managers and business owners. Reducing the level of working capital, which will not result in the loss of the ability to settle current liabilities and increase profitability, is a sign of improving the efficiency of business management.

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An Assessment of Gross State Domestic Product at Constant (2011-12) Prices in India from 2011 to 2017

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Abstract

Contextual
Assess the Gross State Domestic Product (GSDP) at Constant (2011-12) Prices in India and states and union territories from 2011 to 2017.

Methods
Technical analyses of percentage growth rate of GSDP at constant (2011-12) prices over previous year 2011-12 and regression applied to the assessment of GSDP are carried out.

Results
It helps to take remedial measure to increase the GSDP and formulate policies for improvement of the state/union territories of India.

Keywords: Gross State Domestic Product (GSDP), percentage growth rate of GSDP

1. Introduction

The state domestic product is well-known as income of the state and is one of the important meters to measure economic development of the state. These things are more helpful to formulate policies for the development of the state/union territories. These estimates are also helpful to analyze the status of the economy of the state among other states and union territories. It expresses overall picture of the economy of the state/union territories in a certain period of time. The state domestic product is well-defined as the cumulative of the value of all goods and services produced within the geographic limits of the state/union territories and calculated without any repetition during exact period of times regularly in a year. These estimates are measured both at current and constant (2011-12) prices. The current price of the state domestic product are acquired by estimating the goods and services of the prices prevalent during the year which are not expresses actual economic growth of the state/union territories because of the changes in size and prices of goods and services in a certain year. According to remove the impact of price changes or inflation, the estimations of state domestic products are measured by estimating the goods and services in the prices prevalent in the base year termed as constant (2011-12) prices. Hence this paper tries to assess the Gross State Domestic Product at Constant (2011-12) Prices in India and states and union territories from 2011 to 2017. The rest of the paper is organized as follows. Section 2 offerings review of literature relates to Gross State Domestic Product (GSDP). Objective of the paper is given in section 3. The methodology of the study is given in section 4 while section 5 termed sources and nature of data. Analysis of the data are stated in section 6 and finally, conclusions and policy suggestions presented in section 7.
2. Review of Literature

Special correspondents of the Hindu newspaper (2015) coded that Maharashtra is the biggest economy in India with Rs.16.87 lakh crores as GSDP and is followed by Tamil nadu and Uttar Pradesh. Because of highest tax revenues, Gujarat and Tamil nadu trailed Maharashtra.


Tina Edwin (2017) stated that Arunachal Pradesh’s GSDP extended 16.5 per cent and Jammu and Kashmir has 14.7 percent at constant 2011-12 prices. The rapid extension of Jammu and Kashmir’s GSDP derived after a 0.3 per cent reduction in 2014-15 while the State was smash by its worst flood.

Paramita Chatterjee (2017) explained that India’s Gross Domestic Product (GDP) is projected to grow 7.2 percent in 2017-18, World Bank specified that in 2016-17, India’s GDP is projected to be 6.8 percent. This is due to the impact of demonetization. Though, the World Bank also emphasized the stumpy and decreasing participation of women in the labour market that is harmful to the country’s growth. Greater female labour force participation is key to driving India towards double digit progress.

Jayajit Dash (2017) stated that Odisha has recorded a GSDP growth rate of 7.94 per cent in 2016-17, exceeding the average national rate of 7.1 percent, according to advance estimates in the Economic Survey due to the reason of good monsoon.

Vikas Dhoot (2017) coded that the Central Statistics Office on August 31, India’s economy, as measured by GDP raised by 5.7% in the first quarter of 2017-18 compared with 7.9% in the same quarter a year ago. India raised by a solid 9.1% in the quarter from January 2016 to March 2016. The growth verified in the succeeding quarters was 7.9%, 7.5%, 7% and 6.1%. So, this is the fifth quarter in a row that the growth has slipped, with the pace of decline picking up momentum in the last two quarters. Because of the demonetization measure and introduction of the Goods and Service Tax (GST) of the Government, but economists trust the enduring effects continue to shock sentiment and the government has justified that 86% of the money pull out in circulation.

Chandrashekhar. B (2017) expressed that Telangana has nailed the GSDP growth rate for current fiscal (2016-17) at 10.1% at constant prices (2011-12) and at 13.7% at current prices as Rs. 5.11 lakh crore at constant prices and Rs. 6.54 lakh crore at current prices. To record, an inspiring progress of 17.2% at current prices due to good monsoon and other supportive measures by the government to revamp the rural economy.

1. Objectives of the paper

The objective of this paper is to find out the status of Gross State Domestic Product at constant (2011-12) prices in India and states and union territories from 2011 to 2017.

2. Methodology

As mentioned in the introduction, this paper aims to assess the Gross State Domestic Product at constant (2011-12) prices in India from 2011 to 2017. Linear Regression analysis has been applied Gross State Domestic Product at constant (2011-12) prices with years.

3. Data used

Central Statistical offices of India’s data on Gross State Domestic Product at constant prices during the period 2011-12 to 2016-17 at 2011-12 constant prices for analysis of GSDP of Indian states and union territories’ economy is used in this study. This data is presented in Table 1. The Gross State Domestic Product at Constant (2011-12) Prices during the above-mentioned time period in percentage growth rate over previous year 2011-12 is presented in Table 2.

4. Data analysis

Andhra Pradesh: Gross State Domestic Product at Constant (2011-12) Prices of Andhra Pradesh has increased from 3794013 Million INR in 2011-12 to 5470214.5 Million INR in 2016-17. The state has increased percentage growth rate of GSDP over previous year 2011-12, which is 0.32%, in 2012-13 to 11.61% and it is above the growth rate of all India – GDP (7.11%) (Table 2).
Arunachal Pradesh: Arunachal Pradesh is one of the highest percentage growth rates of GSDP over previous year 2011-12 among the state/union territories of India which is 16.47% in 2015-16 whereas 2.14% in 2012-13 (Table 2). The state’s Gross Domestic Product has increased from 110627.1 Million INR in 2011-12 to 167443.3 Million INR in 2015-16.

Assam: The state of Assam’s Gross Domestic Product has increased from 1431749 Million INR in 2011-12 to 1789296.43 Million INR in 2015-16. Assam has notable increased percentage growth rate of GSDP, which is 8.30% (Table 2).

Bihar: Bihar is one of the highest percentage growth rates of GSDP over previous year 2011-12 among the state/union territories of India which is 10.32% in 2016-17 whereas 3.39% in 2012-13 (Table 2). And GSDP at constant price (2011-12) of Bihar has increased from 2471440 Million INR in 2011-12 to 3315717.858 Million INR in 2016-17.

Chhattisgarh: The state of Chhattisgarh’s Gross Domestic Product has increased from 1580738 Million INR in 2011-12 to 2239319.988 Million INR in 2016-17. Chhattisgarh has increased percentage growth rate of GSDP over previous year 2011-12 from 4.97% in 2012-13 to 7.14% around All India-GDP 7.11% (Table 2).

Goa: Gross State Domestic Product at Constant (2011-12) Prices of Goa has increased from 423666.6 Million INR in 2011-12 to 447171.796.5 Million INR in 2015-16 while it is awfully reduced from 2011-12 (447171.796.5 Million INR) to 2012-13 (358502.2 Million INR) and 2013-14 (315684.6 Million INR) because of that the state has negative percentage growth rate of GSDP over previous year 2011-12 which are -15.38% and -11.94% in the 2012-13 and 2013-14 respectively (Table 2).

Gujarat: Gujarat is one of the concentrated percentage growth rates of GSDP over previous year 2011-12 among the state/union territories of India is 11.09% in 2015-16 whereas 7.56% in 2013-14 (Table 2). And GSDP at constant price (2011-12) of Gujarat has increased from 6156061 Million INR in 2011-12 to 9013752.79 Million INR in 2015-16 (Table 1).

Haryana: Gross State Domestic Product at Constant (2011-12) Prices of Haryana has increased from 2975385 Million INR in 2011-12 to 4346079.272 Million INR in 2016-17 whereas percentage growth rate over previous year 2011-12 has reduced in the years of 2014-15 and 2016-17 which are 5.72% and 8.75% respectively (Table 2).

Himachal Pradesh: Gross State Domestic Product at Constant (2011-12) Prices of Himachal Pradesh has increased from 727198.5 Million INR in 2011-12 to 1039139.441 Million INR in 2016-17. The state has increased percentage growth rate of GSDP over previous year 2011-12 is 6.41% in 2012-12 to 9.14% in 2015-16 while it has dropped to 6.90% in 2016-17 (Table 2).

Jammu & Kashmir: The state of Jammu & Kashmir’s Gross Domestic Product has increased from 782555.5 Million INR in 2011-12 to 972892.706 Million INR in 2015-16. Jammu & Kashmir has noteworthy increased percentage growth rate of GSDP over previous year 2011-12, which is 14.70% while it has negative percentage growth rate over previous year 2011-12 in 2014-15 as -0.31% (Table 2).

Jharkhand: Jharkhand has more volatile percentage growth rate of GSDP over previous year 2011-12 among the state/union territories of India between 8.17% in 2012-13 and 7.69% in 2016-7 (Table 2). And the percentage growth rate of GSDP is 1.57% in 2013-14, 12.49% in 2014-15 and 5.90% in 2015-16. GSDP at constant price (2011-12) of Jharkhand has increased from 1509176 Million INR in 2011-12 to 2127205.8 Million INR in 2015-16 (Table 1).

Karnataka: Gross State Domestic Product at Constant (2011-12) Prices of Karnataka has increased from 6060098 Million INR in 2011-12 to 8738538.748 Million INR in 2016-17. The state has impulsive percentage growth rate of GSDP over previous year 2011-12 is 6.15% in 2012-12 increased to 9.57% and it declined to 6.68% in 2014-15 and again increased to 8.36%, lastly concentrated to 7.25% in 2016-17 (Table 2).

Kerala: The state of Kerala’s Gross Domestic Product has increased from 3640479 Million INR in 2011-12 to 4476922.14 Million INR in 2015-16. Kerala has significant increased percentage
growth rate of GSDP over previous year 2011-12 is 6.60% in 2015-16 from 3.89% in 2013-14 which was declined from 6.50% in 2012-13. (Table 2).

- **Madhya Pradesh:** Madhya Pradesh has increased Gross Domestic Product from 3155609 Million INR in 2011-12 to 4652117 Million INR in 2016-17. Madhya Pradesh has substantial increased percentage growth rate of GSDP over previous year 2011-12 is 3.62% in 2013-14 to 12.21% in 2016-17. And there was slump from 11.38% in 2012-13 to 3.62% in 2013-14. (Table 2).

- **Maharashtra:** Maharashtra is one of the major economy in India and its Gross Domestic Product has increased from 12759479 Million INR in 2011-12 to 16597760.5 Million INR in 2015-16 nonetheless there is volatile in percentage growth rate of GSDP over previous year 2011-12 is 7.30% in 2013-14 to 5.44% in 2014-15 and increased to 8.47% in 2015-16. (Table 2).

- **Manipur:** Gross State Domestic Product at Constant (2011-12) Prices of Manipur has increased from 129146.1 Million INR in 2011-12 to 158563.922 Million INR in 2015-16. The state has impulsive percentage growth rate of GSDP over previous year 2011-12 is 0.54% in 2012-13 increased to 8.71% in 2013-14 and it declined to 6.97% and 5.01% in the years 2014-15 and 2016-17 respectively (Table 2).

- **Meghalaya:** Meghalaya has increased gross domestic product from 199177.4 Million INR in 2011-12 to 219030 Million INR in 2015-16. Meghalaya has more instable increased percentage growth rate of GSDP over previous year 2011-12, which is 2.19% in 2012-13 to 1.83% in 2013-14. And there was fall from 1.83% in 2013-14 to -2.74% in 2014-15 and recovered in 2015-16 as 8.66% (Table 2).

- **Mizoram:** Mizoram has increased Gross Domestic Product from 72586.9 Million INR in 2011-12 to 124877.34 Million INR in 2015-16 but its percentage growth rate of GSDP over previous year 2011-12 has declined from 24.59% in 20114-15 to 10.89% to 2015-16.

- **Nagaland:** Gross domestic product of Nagaland has increased from 121767.4 Million INR in 2011-12 to 148511.097 Million INR in 2015-16 whereas percentage growth rate of GSDP over the period 2011-12 has reduced from 7.19% in 2013-14 to 3.14% in 2015-16. (Table 2).

- **Odisha:** Gross Domestic Product of Odisha has increased from 2278723 Million INR in 2011-12 to 3143637.827 Million INR in 2016-17 although percentage growth rate of GSDP over the period 2011-12 has reduced from 8.73% in 2013-14 to 7.94% in 2016-17.

- **Punjab:** Gross State Domestic Product at Constant (2011-12) Prices of Punjab has increased from 2666283 Million INR in 2011-12 to 3484866.337 Million INR in 2016-17. The state has imprudent percentage growth rate of GSDP over previous year 2011-12 which is 5.93% in 2016-17 but maximum percentage growth rate of domestic product in is 2013-14 as 6.63%. (Table 2).

- **Rajasthan:** Rajasthan has increased Gross Domestic Product from 4343660 Million INR in 2011-12 to 5459906.32 Million INR in 2015-16. Rajasthan’s percentage growth rate of GSDP over previous year 2011-12 steadily increased from 4.79% in 2012-13 to 6.64% in 2015-16. (Table 2).

- **Sikkim:** The state of Sikkim’s gross domestic product has increased from 111651 Million INR in 2011-12 to 150952.4305 Million INR in 2016-17. Sikkim has increased percentage growth rate of GSDP over previous year 2011-12 from 2.29% in 2012-13 to 7.90% then reduced to 7.77% in 2015-16 and 7.16% in 2016-17 and around All India-GDP (7.11%) (Table 2).

- **Tamil Nadu:** Gross State Domestic Product at Constant (2011-12) Prices of Tamil nadu has increased from 7514858 Million INR in 2011-12 to 10190780.03 Million INR in 2016-17. The state has gradually increased percentage growth rate of GSDP over previous year 2011-12 is 5.41% in 2012-13 to 7.42% in 2016-17 and lowest also recorded as 4.89% in 2014-15 (Table 2).

- **Telangana:** Telangana is one of the virtuous record of increased gross domestic product from 3594341Million INR in 2011-12 to 4979574.4 Million INR in 2016-17 whereas its percentage growth rate of GSDP over previous year 2011-12 has considerably increased from 2.73% in 2012-13 to 10.15% to 2016-17.

- **Tripura:** Gross State Domestic Product at Constant (2011-12) Prices of Tripura has increased from 192084.1 Million INR in 2011-12 to 250863.168 Million INR in 2014-15. The state has standard
The percentage growth rate of GSDP over previous year 2011-12 is 8.67% in 2012-13 to 9.94% in 2014-15 (Table 2).

- **Uttar Pradesh**: The state of Uttar Pradesh’s Gross Domestic Product has increased from 7240504 Million INR in 2011-12 to 9675166.1 Million INR in 2016-17 however Uttar Pradesh has sequestered percentage growth rate of GSDP over previous year 2011-12 from 4.72% in 2012-13 to 5.79% in 2013-14 then reduced to 4.03% and increased to 8.01% in 2015-16 and finally declined to 7.35% in 2016-17 and around All India-GDP (7.11%) (Table 2).

- **Uttarakhand**: Gross State Domestic Product at Constant (2011-12) Prices of Uttarkhand has increased from 1153276 Million INR in 2011-12 to 1628240.853 Million INR in 2016-17. The state has gradually decreased percentage growth rate of GSDP over previous year 2011-12 which is 7.27% in 2012-13 to 7.00% in 2016-17 and highest also recorded as 8.47% in 2013-14 (Table 2).

- **Andaman & Nicobar Islands**: Andaman & Nicobar Islands is one of the union territories of India and it has increased Gross Domestic Product from 39786.69 Million INR in 2011-12 to 51331.8957 in 2015-16 and also there is steady increase in percentage growth rate of GSDP over previous year 2011-12 which is 4.47% in 2013-14 to 8.25% in 2011-15 which is above the All India-GDP. (Table 2).

- **Chandigarh**: Chandigarh is also one of the union territories of India and Gross State Domestic Product at Constant (2011-12) Prices of Chandigarh has increased from 187681.6 Million INR in 2011-12 to 247454.464 Million INR in 2015-16. The union territory has declined percentage growth rate of GSDP over previous year 2011-12 is 9.56% in 2012-13 to 7.82% in 2015-16 and also lowest recorded in 2014-15 as 2.50% (Table 2).

- **Delhi**: Delhi is the capital of India and also a union territory of India and it has increased Gross Domestic Product from 3437666 Million INR in 2011-12 to 4982168.835 in 2016-17 and percentage growth rate of GSDP over previous year 2011-12 is increased from 6.62% in 2012-13 to 2015-16 and then reduced to 8.26% in 2016-17 (Table 2).

- **Puducherry**: Puducherry is also one of the union territories of India and Gross State Domestic Product at Constant (2011-12) Prices of Puducherry has increased from 168180.1 Million INR in 2011-12 to 217036.9401 Million INR in 2016-17. The union territory has instable percentage growth rate of GSDP over previous year 2011-12 which is 2.93% in 2012-13 to 10.74% in 2013-14 and then negative -5.03% in 2014-15 to 10.34% in 2015-16 and declined to 8.04% in 2016-17 (Table 2).

- **All-India GDP**: Gross State Domestic Product at Constant (2011-12) Prices of India has increased from 87363290 Million INR in 2011-12 to 121898540 Million INR in 2016-17. India has gradually increased percentage growth rate of GSDP over previous year 2011-12 is 5.46% in 2012-13 to 8.01% in 2015-16 and declined to 7.11% in 2016-17 because of demonetization and GST implemented in the economy. (Table 2).

- **Regression result**: Regression analysis carried out to assess the linearity between State Gross Domestic Product of India and State/union territories with the years from 2011-2017 and presented in the Table 3. The regression result shows that all Indian state and union territories have significant level Gross State Domestic Product at Constant (2011-12) except Goa and Meghalaya (coefficient are very low compare with other state/union territories; see the table 3) because of percentage growth rate of GSDP over previous years are not constant and the economic growth of domestic product is unbalanced. (Table 3)

### 3. Conclusions

India’s and her state/union territories’ Gross State Domestic Product at Constant (2011-12) Prices have significantly increased from 2011-12 to 2016-17. The percentage growth rate of Gross State Domestic Product at Constant (2011-12) Prices over previous year (2011-12) have also increased in many states are Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir,Madhya Pradesh, Telangana, and Andaman & Nichobar Island and other states/union territories have lowest percentage growth rate are Chhattisgarh, Goa, Jharkhand,
Karnataka, Mizoram, Nagaland, Uttar Pradesh, Uttarkhand and union territories are Chandigarh, Delhi and Puducherry. The reasons for lowest percentage are implementation of demonetization, GST, and also monsoon failure throughout the country India. Even though some other states are having good percentage growth rate of GSDP because of good monsoon and proper usage of resources in the states are available and through the appropriate government policy measures. The implementation of demonetization and GST will take time to provide worthy result on GSDP. Hence the government of India and State/union territories have to take necessary measures and policies to escalation of their domestic product, accordingly the state/union territories' employment will surge and income of the people will increase and meet out the impact of inflation in the country.

**Tables**

**Table 1. Gross State Domestic Product at Constant (2011-12) Prices**

(In Millions INR)

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*Note: The estimates of West Bengal for new series with base year 2011-12 compiled by the DES, West Bengal are under examination

*Provisional
### Table 2. Growth Rate of Gross State Domestic Product at Constant (2011-12) Prices
(Percentage Growth Rate Over Previous Year 2011-12)

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Source: Calculation based on data of Central Statistical Offices, Government of India 2017

### Table 3. Regression Results
(Regression result of the dependent variable Gross State Domestic Product at Constant (2011-12) Prices with year as an independent variable)

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Strategic Positioning of the Road Freight Transportation Companies: the Case of Croatia

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Abstract

In today’s environment, for the companies to survive, it is necessary that they establish strong positions. Positioning enables a firm to present its strategy to the target market and gives it the possibility of managing the users of its services. Management faces the most crucial decision: to determine the desired positioning strategy. Since road freight transporters are leaders in Croatian land transportation, the focus of this paper is placed on the analysis of their strategic positioning. In last years it become crucial for road freight transporting companies that they direct their interest from the basic service (transportation) to additional services to surpass the needs and expectations of their users. Strategies that can be used for positioning of road freight company have been analysed. Due to that the key factors (macro environment and regulation, logistics strategies of the borderline industries, sources of creating value in road freight industry) that determine the process of their positioning have been analysed.

Keywords: positioning, regulation, road freight transporters, the Republic of Croatia

Introduction

Positioning is a process that, through the marketing mix, influences the consumer perception of the product or the service in relation to the alternatives. It is a specific way of operating, so a company’s strengths could be displayed in the chosen environment and be recognized as advantages (Pavlekl, 2008).

Fig. 1. Conceptual model of the strategic positioning of the road freight transporting companies in Croatia
Companies that want to survive today, have to develop strong positions. A position is in fact the distinctive competence that a company wants to present itself with on a market and there create competitive advantage (Easingwood and Mahajan, 1989). Competitive advantage will hardly be achieved by the firms that have no clear positioning strategy (Dombrowski, Krenkel and Wullbrandt, 2018: 1196). Therefore, management faces the most critical decision of determining the desired positioning strategy (Wind, 1988: 402). Positioning strategy is defined as the choice of target segments and unique characteristics a firm uses to compete on the market (Jobber, 1998). Positioning alternatives available to firms are limited by their resources and capabilities (Graham, Broderick and Moller, 1998). As road freight transporters are leaders in Croatian land transportation, for the purpose of this paper, a conceptual model of strategic positioning of the road freight transporters in Croatia has been constructed. The goal is to analyse key factors that determine the process of their positioning.

Macro Environment and Regulation in Croatian Road Freight Industry

Market regulation is generally concerned with correction of some market irregularities. A market needs regulation if there are some externalities present or if the government deems an intervention is necessary for stabilization of the specific industry, with the aim of price and employment regulation (Hoj, Kato and Pilat, 1995). A national strategy for road freight is crucial to ensure domestic demand for efficient transport of goods is satisfied, and to enable domestic road freight transporting firms to be globally competitive (Sulaiman, 1997). Ideal traffic system is efficient, strong and financially stable; and in order to achieve that ideal, regulatory policies have to be so created as to ensure that all the transporters have equal status on the market. Regulatory environment is the basic factor of an industry’s efficiency. Fair, cost-efficient and balanced regulatory demands are crucial for the establishment of sustainable development. Regulatory institutions can under no circumstances provide advantage for any participant on the market through special promotions, subventions or tax relieves (Londoño-Kent, 2009).

Material law in case of international road freight transport of goods is the Convention on the Contract for the International Carriage of Goods by Road (the CMR Convention), whose provisions are applicable in the cases when the point of loading and the point of delivery of the goods are in two different countries. On the other hand, the contract on the domestic transport has been regulated with the Civil Obligations Act (cro. Zakon o obveznim odnosima) (Radionov, 2009).

Croatian road transport law encompasses four areas: legal status of the roads as the traffic infrastructure, organization of the road transport market, traffic safety and the contracts on the road transport of goods (Radionov Radenković, 2006). Legal status of the road infrastructure is regulated with the Highway Act (cro. Zakon o cestama) (Official Gazette, 92/14), organization and access to the road transport market with the Road Transport Act (cro. Zakon o prijevozu u cestovnom prometu) (Official Gazette, 82/13), while road traffic safety is under the regulation of the Road Traffic Safety Act (cro. Zakon o sigurnosti prometa na cestama) (Official Gazette, 67/08). The government controls international road transport of goods, i.e. the transport into the countries that are not EU members, but Croatia has concluded a bilateral agreement with them. This agreement defines the number of international permits both countries can grant their transporters for operating between the two countries, which ultimately means that Croatian transporters have limited access to those markets, and the transporters from those countries have limited access to the Croatian market. In the domestic transport, regulation has not limited the access to the traffic market enough, which has led to a considerable surplus of the capacity on the market, and the vehicles are mostly not technologically advanced or are of the high average age. The issue of insufficient and poorly defined criteria when assigning a certain permit quota represents large burden for the Croatian transporters and decreases their competitiveness (Banelli, Kolak and Vukadinović, 2009). The state plays an important role in case of a crisis on the domestic market, because, in line with the Council Regulation n. 3916/90, it can provide a comprehensive report to the Commission at the European Union which confirms the crisis and submit a proposition of the measures for the protection of the domestic transporters. This
is regulated with the Road Transport Act (2013), which also states that the protection measures can be applied for not more than six months, with the possibility of a one-time prolongation. Fixed costs have a big influence on the price of the transport service, and the level of the cost is also influenced by the fees prescribed by the law. Therefore, it can be said that the state influences the prices of the transport and the competitiveness of its transporters considerably, on the domestic and on the international market. Through forming the taxes and excise duties, the state influences the fuel prices, which represents 15-30% of the total costs of the road transporters, depending on the type and the way of the vehicle utilization, which, in the end, also reflects in their competitiveness on the domestic and the international market. Transporters are not the final consumers of the fuel because to them, fuel is the raw material for the production of the transporting services they provide while performing their basic business activity. From this perspective, it can be concluded that the price of the fuel for the transporters should be lower that for the final consumers, the fact which could also influence the increase of the competitiveness of our transporters (Banelli, Kolak and Vukadinović, 2009). The specificity of the Croatian market is in the fixed costs that are different depending on the county, since the insurance policy is still paid regarding the headquarters of the firm. This discrimination is unjustified, since the headquarters does not influence the risks in the transportation process, because the transport is performed not just among the counties, but also among the countries (Faculty of Transport and Traffic Sciences, 2006). The government should eliminate this discrimination with new regulations.

With the aim of increasing the quality of the vehicle fleet of the Croatian road transporters, in 2009 the Programme for Reducing Negative Influence on the Environment was issued, and since then, a tender is opened once every year for allocating 70,000 Kuna to the Croatian transporters for buying new vehicles with the highest EURO standard (Ministry of the Sea, Traffic and Infrastructure and the Environmental Protection and Energy Efficiency Fund, 2009). Besides this Programme, the government has over the years introduced the following measures with the aim of increasing the competition of the Croatian road transporters: 1. It has ensured the reduction of the road tolls for the highways under the management of Hrvatske caste d.d. (a company that manages Croatian public roads) for the vehicle categories III and IV, 2. It has reduced the fee for issuing the Annex in line with the CEMT Resolution and 3. It has reduced the fees for single CEMT permits.

The Regulation should arrange the traffic market better, especially regarding domestic transportation. The sometimes-cruel traffic market entices transporting firms to set the fares below the level of profitability, which then results in entering the grey economy and the reduction of labour rights (Banelli, Kolak and Vukadinović, 2009).

Strategic Positioning of the Croatian Road Transporters

Positioning is an important strategic concept that enables a firm to display its strategy to the target market and to manage the relations with the target consumers on the selected market segments (Simonić, 2012). The importance of road transport in the context of the modern economies is unquestionable. In order to increase the efficiency and reliability of the transport and remain competitive on the market, road transporters have to continually develop innovations. Information and communication technology still represent one of the key areas of innovation.

The current economic volatility has forced road transporting firms to optimize their costs and, at the same time, to improve the service level (Evangelista and Sweeney, 2014).

In order to position themselves well on the market and develop an adequate strategy, road transporters have to take into account the following market demands (Simonić, 2012):

1. The heavy industry and production concentration on the global scale leads to the increase of the volume of the business for one buyer and from one point.
2. The increased demand in the transporting industry calls for a higher level of service.
3. Specialization becomes more and more necessary.
4. The pressure from the competition imposes the need for providing additional logistics services (storage, packaging, labelling etc.).

Transporting firms need to make the decision whether they will service the domestic market, the international market or both; whether they will supplement their offer with additional logistics activities and, finally, whether they will specialize for the specific types of transport (hazardous material, fluids, special cargo etc.). Transporting companies that operate in the Republic of Croatia do not have the same development conditions. Some of them operate efficiently in the current conditions and have adequate strategic potential, while most of them operate in significantly poorer conditions and strive to tackle the existing organizational and economic issues. For them, it is most important to overcome these difficulties and survive on the market.

During recession, firms that offer transportation of the goods try to increase their competitiveness by lowering the transportation costs, improving the quality of their services and servicing, improving the image of the company and by expanding onto other markets. Also, they can achieve the same by investing in additional training of the drivers and additional analysing of the consumer satisfaction.

Internal factors: people, technology and implementation of information technologies are exceptionally important for creating and anchoring competitive advantage. Langviniene and Sližienė (2012) state that reputation of a transporting firm and complying with the contract provisions are two most important factors of competitiveness. The partnership among small transportation firms has enabled them to expand the offer without bearing too much cost.

Graph 1. Road transport of goods in the Republic of Croatia, 2008-2017 (mln tkm)


If we are to consider road transport from the aspect of destination, then we can distinguish domestic and international transportation. Graph 1 presents the amount of the transported goods in tkm in domestic road transport. It can be noticed that in 2017, the amount was lower by 35% in relation to the year 2008. In the same period, the amount of the transported goods in the international transport was higher by 65%. This can lead us to conclude that our transporters should orient themselves towards the foreign market. Since the drop in the international transport was considerably smaller than in the domestic transport during the crisis, it can be concluded that the demand for their services is much more stable on the international market.

In the area of the human resources management in road transport, the modern organization approach has not been thoroughly applied, and the negative consequences of this condition are (Banelli, Kolak and Vukadinović, 2009):

- Insufficient use of modern transporting technologies which enter the phase when market analysis and the application of the marketing concept in planning of its growth and development are critical.
• Insufficient knowledge about important legalities and relevant technical and technological, organizational, legal, financial and marketing aspects of the transporting services production.
• Inadequate and unsystematic approach to human resources that should be based on the analysis and respect of modern organizational and marketing achievements.
• Unsatisfactory professional qualification of the managers and their disinterest in the complicated research of the modern aspects of production of the services in the road transport.
• Unfavourable expertise and age structure of the drivers.
• Inconsistent and uncontrolled professional training of the drivers and other staff.

Transporting companies in Croatia are mostly small firms that partially operate on the national and the foreign markets, and generally, every firm sets their own price of the transport. Organizational, administrative, technological and other changes are necessary to advance transporting processes in all the phases and to increase the competitiveness of our transporters. A certain number of the transporting firms are dependent on the season and they are most active during the specific part or parts of the year. The smaller the firm, the harder it is to establish an optimal organizational model.

So, one person performs a series of activities, which, in the end, usually results in transportation service being not good enough. The big issue is insufficient education and the attitude that expanding the vehicle fleet always means success, and little thought is given to specialization and the establishment of the optimal vehicle fleet size with the optimal organizational model (Banelli, Kolak and Vukadinović, 2009).

Road transport firms from the countries of Eastern Europe differentiate themselves with considerably lower salaries and therefore more competitive operational costs and so, they present a big threat to Croatian road transporters (Evangelista and Sweeney, 2014). If they want to keep their competitive advantage, road transport firms have to, at least twice a year, conduct the analysis of their clients’ needs and eventually make any necessary adjustments to their service so that it is in line with their clients’ wishes. Transporters that operate outside the borders of Croatia should use aid from the EU structural funds for the modernization of the vehicle fleet. Aiming at attracting as many clients as possible, road transporters should, above all, constantly improve upon their services and reputation (Lazauskas et al., 2012).

Positioning among the others enables a company to manage the users of its services, and a road transporter has to define which attributes to develop and promote on the market with their positioning strategy. The criteria that play the critical role in determining a positioning strategy of a road transporter are:

1. Price.
2. Transporting service characteristics (transportation of hazardous materials, transportation of fluids, transportation under controlled temperature etc.).
3. Availability (the possibility of ordering at any point and from any location).
4. Reliability (on-time delivery).
5. The level of the technology used.
6. Flexibility (adjusting to the clients demands).

The emphasis in the very process of the positioning should be on creating image of the transporting firm, the type of the service, the characteristics of the services it offers and the needs and expectations of the users (Simonić, 2012). The phases in the positioning process of a road transporter are:

- Identifying the transporting service of the competition.
- Identifying the transporting service characteristics.
- Analysis of the existing position on the road transport market.
- The choice of the positioning strategy.
- Application of the positioning strategy.
- Measuring the efficacy of the applied positioning strategy.
A road transport firm can choose among (SPOET Foundation et al., 2006):

1. the subcontracting strategy (oriented exclusively towards the big buyers),
2. the specialization strategy (specialized for the specific type of transport: chemicals, easily perishable goods, special cargo etc.),
3. the organizational strategy of one’s own traffic network (networking with the companies from abroad),
4. the strategy of spreading the logistics services (the firm expands its basic offer with additional services: packaging, storage, filling out the documentation, inclusion in the specific stage of the production etc.).

The key characteristic of the Croatian road transport market is a large number of small firms, i.e., 90.4% of the road transporters have vehicle fleets of less than five cargo vehicles (Jović, 2013). These firms not only should choose an adequate strategy from the above-listed, but also should consider the possibility of concentrating and associating if they want to survive on the market (Babić, 2012).

Strategic alliances imply joint effort of two or more firms where they merge their resources trying to achieve common goals that they could not achieve individually or could achieve them with great difficulties (Lambe, Spekman and Hunt, 2002). In Croatia, as early as in 2002, there was a cluster of the road transporters formed, but its role, and the role of the ones that were founded later on, is marginal because most firms do not realize the potential of the clusters functioning as in other member states. Fuel cost is one of the highest costs for all the transporters. It is necessary that road transporters form interest alliances more actively and jointly appear before the suppliers of the oil products. Road transporters have to focus more on their inner reserves, where the fuel cost rationalization offers good possibilities for successful business and sustainable development. It is a complex and a very demanding process, where all the participants in the chain are important and where necessary savings cannot be achieved without cooperation and team work under precise and sensible instructions from the management and the active role of the drivers. The state should be more actively involved with its instruments for increasing the competitiveness of the Croatian road transporters, which also relates to every transporter individually. Transporting firms should commit to improving their services and to conducting necessary activities systematically (Banelli, Kolak and Vukadinović, 2009).

Logistics Strategies of the Borderline Industries

The twenty-first century offers many new missions, challenges and opportunities for the companies. Also, due to the rising global competition, financial crisis and the increased awareness on the ecological issues, the firms have to implement new business strategies (Leenders, 2009). For it to be successful and competitive, a firm needs to react quickly to the market changes, customer demands and the behaviour of the competition (Vlckova, Exnar and Machac, 2013). The users of the transporting services, present in the production and the consumption, look for adequate transporting capacities when it suits them individually, and reliable drivers who will carry out the given function within the limits of the optimization of the indicators of the transporting process qualities (Banelli, Kolak and Vukadinović, 2009). Križman Pavlović and Kalanj (2008) state that Croatian firms mostly position their offer through the strategy of differentiation (76%) and, more rarely (24%), through the strategy of cost leadership.

Transportation demands are conditioned with the economic activity in the specific environment. Stronger economic subjects will generate more transportation demands in dispatch and delivery, in import and export, and following that, they can influence the forming of the transportation price and the capacity of the vehicle fleet in the environment (Banelli, Kolak and Vukadinović, 2009).

Managing logistics functions in the modern organizations includes making decisions on the entire distribution of the goods and services with the aim of maximizing the value and minimizing the costs (Razzaque and Sheng, 1998). Regardless of the importance of other modalities in the global logistics, it is almost impossible to establish the supply chain, in the country or abroad, without the use of the
road network (Daalhuisen, 2013). Lower costs of transportation improve the efficiency in the supply chain, but also influence the growth of creating value in the value chain (Larsen, 2003).

The idea of externalization of the isolated logistics activities to the outer providers, like the transportation, is not a new phenomenon, but today, it represents one more approach that can lead to a higher degree of competitiveness. Externalization of the logistics functions includes the use of external firms for activities traditionally performed inside the organization (Bowersox and Closs, 1989). It relates to delegating storage and shipping activities to the firms that possess long-term knowledge, technology, means and experienced staff. For the process of externalization to be successful, one should be strategically well prepared. If a company decides to use a combination of its own and the external transportation, the biggest problem is the decision on what users it will service with which type of the service (Vlckova, Exnar and Machac, 2013).

Externalization offers many advantages for those who use it. Since road transport firms are able to ensure transport at lower price due to the economies of scope connected with providing their same basic business service to other firms, capital investments and costs are primarily cut (Bowersox and Closs, 1989). For many companies, it is hard, expensive and often risky to perform transportation alone. Therefore, transportation services have become activities that are most often externalized (Vlckova, Exnar and Machac, 2013). The loss of control, the loss of contact with important information, failure to choose the provider, unreliable promises of the providers and their inability to respond to the changing demands are also perceived by the users as potential problems (Bradley, 1995). Partnership with logistics service providers or transporting firms develops through long-term contracts which should result in synergy in the shape of a balanced ratio of costs and added supply chain value (Vlckova, Exnar and Machac, 2013).

The research conducted so far in the Republic of Croatia show that the process of externalization encompasses the following processes or their parts: processes relating to transportation and distribution (61% of the firms that use externalization), information services and maintenance (41% of the firms use externalization), production and legal work (30%), marketing activities (27%) and import/export services (26%) (Drljača, 2010).

Externalization will still surely represent a key part in the supply chain and the cost strategy of many companies. For the strategy of the firm that includes externalization, it is proved that it can be effective, but that it also implies considerable risks. Therefore, firms have to carefully choose and manage their partners to ensure that the service quality will not be reduced (Protiviti and APICS, 2004).

**Sources of Creating Value in Road Transport**

Competitive advantage is very often associated with the specific characteristics of different competitive strategies and it implies achieving price advantage and measurable profit being the result of the firm’s vantages applied in the process of improving the transport and the associated transporting services (Romanow and Stajniak, 2008). In line with the modern conditions of human resource management, the key to achieving goals of the road transport lies in the permanent professional education and training of the management and other staff, with the aim of creating initial assumptions for efficient satisfaction of the needs of the market groups as the users of transporting services (Banelli, Kolak and Vukadinović, 2009).

If a road transporting firm wants to operate successfully, then the management has to clearly define the target markets, the target groups it wants to service, and also identify the needed resources. It is of extreme significance to have a clearly defined vision of future development (Simonić, 2012).

According to Romanow and Stajniak (2008), basic sources of achieving competitive advantage for road transporting firms are: type of the service (unique and clear missions, recognizable characteristics and capabilities, staff experience), organization (specific functions/operations, transporting technologies), programs (speed and accuracy of the delivery) and the processes (defined ways of work organization). In the results of their research, Langviniene and Sližienė (2012) list
important factors of competitiveness of a firm for transportation of goods: time management, keeping to the agreement, firm’s reputation, confirmation and processing of the orders, vehicle fleet and flexible price system. Implementation of the instruments of competition and the consequent fulfilment of the presupposition in that area consists in the effort of the road transporter to achieve two main goals: strengthening the competitive position in relation to the companies from the sector and neutralizing or overcoming the negotiating advantage of the buyer (Romanow and Stajniak, 2008).

Successfulness of the business activities of a road transporter depends on: utilization of the capacities, the number of the rides, fuel price and other operative costs. With the aim of maximizing the profit, road transporters have to increase their income by utilizing the maximum load capacity of its fleet or adjusting the fleet to different types of goods to satisfy all kinds of demands, from general cargo to easily perishable goods and hazardous materials (Sriraman et al., 2006).

For road freight transporting companies, it is very important to direct their interest from the basic service (transportation) to additional services to surpass the needs and expectations of their users (Karlo Marijanović, 2010). Over the last thirty years, in the developed countries, like the USA, Great Britain and France, many transporters with their main business activity being road transportation, have expanded their services with the assortment of storage services (McKinnon and Piecyk, 2009).

Road freight transport industry is characterized by a series of ecological and social pressures and the rising demands for higher level services at lower prices. Therefore, road transporters should implement new and innovative ways of improving the transport efficiency in order to fulfil the requirements of delivering the goods on time and reliably, but with as little negative influence on the environment (Thomson, 2010). The use of information and sharing them plays the key role in improving the efficiency of the transport (Nagarajan et al., 2005). Main advantages related to the use of ICT applications in road freight transport are the following:

1. Improved planning and the most optimal driving schedule.
2. Better tracking of the vehicle and the goods.
3. Faster transporting operations as the result of a more efficient gathering of information and data analysis.
4. Improved documentation of the transactions.
5. Higher level of coordination and integration among different road freight transporters and other participants in the supply chain.

Information and communication technology are distinguished by cutting the costs and improving the services and therefore, it influences the increase of the total competitive advantage (Forslund, 2012).

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<td>-11,96</td>
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<tr>
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<td>52</td>
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<tr>
<td>Spain</td>
<td>141</td>
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<td>171</td>
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<td>166</td>
<td>169</td>
<td>164</td>
<td>16,31</td>
<td>-2,96</td>
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<td>85</td>
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<td>10,11</td>
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<td>142</td>
<td>157</td>
<td>156</td>
<td>164</td>
<td>36,67</td>
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</tr>
<tr>
<td>Italy</td>
<td>107</td>
<td>111</td>
<td>124</td>
<td>122</td>
<td>122</td>
<td>125</td>
<td>135</td>
<td>26,17</td>
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</tr>
<tr>
<td>Cyprus</td>
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<td>39</td>
<td>37</td>
<td>39</td>
<td>36</td>
<td>32</td>
<td>-11,11</td>
<td>-11,11</td>
</tr>
<tr>
<td>Latvia</td>
<td>225</td>
<td>231</td>
<td>211</td>
<td>220</td>
<td>235</td>
<td>224</td>
<td>220</td>
<td>-2,22</td>
<td>-1,79</td>
</tr>
<tr>
<td>Lithuania</td>
<td>467</td>
<td>484</td>
<td>503</td>
<td>487</td>
<td>452</td>
<td>487</td>
<td>508</td>
<td>8,78</td>
<td>4,31</td>
</tr>
</tbody>
</table>

Table 1. Average distance of carried goods by road freight transport, 2011-2017 (km)
Road freight transporting firms, most of them being small family firms, are facing serious problems while hiring and keeping the staff. Combination of the resources, including human resources, that gives every company unique characteristics, can lead to differences in competitive performances in the entire industry. Human resources are considered valuable if they are mostly heterogeneous in supply and demand, since people differ in the skills they offer, while firms differ regarding the work they offer. High quality of human resources is also rare because the well-known expansion in human cognitive abilities. Human resources are potentially very mobile, but there are often considerable transaction costs included in the transition from one working place to another. The more specific employees’ skills become for the firm, the less likely is that transition will happen (Marchington and Caroll, 2003). Optimal ratio of experienced and young drivers produces good business results.

Among the indicators whose value reflects efficiency of the road freight transporting firms are the following: the length of the run, empty runs, load factor and the age structure of the vehicle fleet. By dividing the sum of tonne-kilometres generated by the transporter from the specific country with the transported tonnes, average distance of every transported tonne is calculated. In 2017, the transporting firms from Lithuania, Romania, Slovakia and Bulgaria transported the goods at longest distances. While the average distance per run for the transporters from Lithuania was even 508 kilometres, for those from Cyprus, it was only 32 kilometres. Average distance of the Croatian transporters per run has been recording positive growth rate over the last years and in 2017, it was higher by 37% than in 2011, being 164 kilometres. The increase of the traffic system efficiency is one of the main goals of the European traffic policy. Empty runs of the road freight vehicles are inefficient and should be avoided as much as possible. In 2017, one fifth of road freight runs were performed by empty vehicles.

In almost all Member countries there are much more runs with an empty vehicle on national level then on international level (European Commission, 2018).

Table 2. Average vehicle loads in road freight transport, 2011-2017 (t)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
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<tr>
<td>116</td>
<td>121</td>
<td>124</td>
<td>123</td>
<td>125</td>
<td>129</td>
<td>131</td>
<td>12,93</td>
<td>1,55</td>
<td></td>
</tr>
<tr>
<td>Source: author compiled according to Eurostat (2018). Road freight transport by journey characteristics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Buyers identify price and delivery exclusivity as key criteria when choosing a transporting firm, while the firms think key criteria are service and vehicles older than 10 years had the share of 19.8%. In 2017, with the share of 21.8% in the total tkm. Vehicles over 5 years of age and less achieved its highest value in 2017, which was by 3.42% higher than in 2011.

Load factor represents one more measure of road transport efficiency. The bigger the load factor, the fewer vehicle kilometres is necessary to generate the specific number of tonne-km. Fewer vehicle km means less traffic, which eventually ensures less traffic congestion (European Commission DG for Mobility and Transport, 2011). Table 2 shows that in 2017, in the EU, the average load factor of the Croatian road freight transporters achieved its highest value in 2017, which was by 3.42% higher than in 2011.

<table>
<thead>
<tr>
<th>Country</th>
<th>14.6</th>
<th>14.3</th>
<th>14.6</th>
<th>14.9</th>
<th>15.0</th>
<th>14.9</th>
<th>15.1</th>
<th>3.42</th>
<th>1.34</th>
</tr>
</thead>
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<td>15.6</td>
<td>15.3</td>
<td>15.0</td>
<td>15.4</td>
<td>15.1</td>
<td>15.4</td>
<td>-2.53</td>
<td>1.99</td>
</tr>
<tr>
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<td>11.5</td>
<td>10.7</td>
<td>10.2</td>
<td>10.4</td>
<td>10.5</td>
<td>11.0</td>
<td>1.85</td>
<td>4.76</td>
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<td>16.5</td>
<td>16.5</td>
<td>16.0</td>
<td>15.9</td>
<td>-3.64</td>
<td>-0.62</td>
</tr>
<tr>
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<td>16.3</td>
<td>15.9</td>
<td>15.7</td>
<td>15.9</td>
<td>15.8</td>
<td>16.3</td>
<td>-2.21</td>
<td>3.16</td>
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<td>17.1</td>
<td>16.5</td>
<td>16.3</td>
<td>16.7</td>
<td>17.1</td>
<td>2.40</td>
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<td>14.6</td>
<td>14.5</td>
<td>14.7</td>
<td>14.7</td>
<td>14.3</td>
<td>14.4</td>
<td>-1.37</td>
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<td>12.8</td>
<td>12.4</td>
<td>12.4</td>
<td>12.6</td>
<td>9.57</td>
<td>1.61</td>
</tr>
<tr>
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<td>14.7</td>
<td>15.0</td>
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<td>14.8</td>
<td>14.7</td>
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<td>14.6</td>
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<td>15.5</td>
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<td>14.5</td>
<td>15.6</td>
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<td>14.7</td>
<td>14.7</td>
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<td>10.9</td>
<td>11.3</td>
<td>11.3</td>
<td>10.2</td>
<td>-31.08</td>
<td>-9.73</td>
</tr>
<tr>
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<td>15.1</td>
<td>15.5</td>
<td>15.7</td>
<td>15.8</td>
<td>49.06</td>
<td>0.64</td>
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<td>15.3</td>
<td>16.5</td>
<td>18.2</td>
<td>17.2</td>
<td>17.1</td>
<td>14.77</td>
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<td>16.9</td>
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<td>-2.96</td>
</tr>
<tr>
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<td>10.1</td>
<td>9.9</td>
<td>10.3</td>
<td>9.7</td>
<td>9.9</td>
<td>-1.98</td>
<td>2.06</td>
</tr>
<tr>
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<td>13.6</td>
<td>13.7</td>
<td>13.7</td>
<td>13.6</td>
<td>13.5</td>
<td>13.7</td>
<td>0.74</td>
<td>1.48</td>
</tr>
</tbody>
</table>

Table 3. Road freight transport in EU by age of vehicle, 2011-2017 (mln. tkm)

<table>
<thead>
<tr>
<th>Age</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2 years</td>
<td>207.655</td>
<td>270.209</td>
<td>267.184</td>
<td>281.812</td>
<td>339.225</td>
<td>398.646</td>
<td>417.073</td>
</tr>
<tr>
<td>2 years</td>
<td>167.099</td>
<td>173.538</td>
<td>257.495</td>
<td>241.305</td>
<td>237.296</td>
<td>223.055</td>
<td>279.882</td>
</tr>
<tr>
<td>3 years</td>
<td>260.650</td>
<td>148.481</td>
<td>142.505</td>
<td>217.568</td>
<td>188.175</td>
<td>197.107</td>
<td>190.508</td>
</tr>
<tr>
<td>4 years</td>
<td>247.562</td>
<td>215.156</td>
<td>105.323</td>
<td>125.578</td>
<td>169.239</td>
<td>157.582</td>
<td>170.573</td>
</tr>
<tr>
<td>5 years</td>
<td>195.997</td>
<td>207.781</td>
<td>197.077</td>
<td>89.978</td>
<td>101.895</td>
<td>153.699</td>
<td>144.434</td>
</tr>
<tr>
<td>6 years</td>
<td>160.463</td>
<td>169.615</td>
<td>196.122</td>
<td>173.257</td>
<td>82.356</td>
<td>93.612</td>
<td>132.402</td>
</tr>
<tr>
<td>7 years</td>
<td>123.059</td>
<td>127.812</td>
<td>142.305</td>
<td>159.358</td>
<td>149.920</td>
<td>71.580</td>
<td>78.439</td>
</tr>
<tr>
<td>8 years</td>
<td>84.035</td>
<td>93.248</td>
<td>105.910</td>
<td>112.183</td>
<td>136.150</td>
<td>125.358</td>
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<tr>
<td>9 years</td>
<td>75.463</td>
<td>65.928</td>
<td>77.216</td>
<td>80.477</td>
<td>92.315</td>
<td>115.942</td>
<td>101.333</td>
</tr>
<tr>
<td>10 to 14 years</td>
<td>184.218</td>
<td>181.700</td>
<td>173.704</td>
<td>178.202</td>
<td>199.574</td>
<td>219.517</td>
<td>261.636</td>
</tr>
<tr>
<td>≥ 15 years</td>
<td>38.012</td>
<td>38.676</td>
<td>45.433</td>
<td>58.629</td>
<td>62.790</td>
<td>67.547</td>
<td>72.989</td>
</tr>
<tr>
<td>Unknown</td>
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<td>256</td>
<td>815</td>
<td>1.505</td>
<td>2.622</td>
<td>4.143</td>
<td>5.606</td>
</tr>
<tr>
<td>Total</td>
<td>1.699.507</td>
<td>1.692.397</td>
<td>1.711.223</td>
<td>1.719.858</td>
<td>1.761.623</td>
<td>1.830.519</td>
<td>1.913.116</td>
</tr>
</tbody>
</table>
Conclusion

Positioning is a process with which one can influence the consumer perception of the product and the service in relation to the alternatives. It enables a firm to manage the users of their services. The goal of this paper was to analyse the factors that determine positioning of the firms in the Croatian industry of road freight transport. For the purpose of this paper, a conceptual model of strategic positioning of the road freight transporting firms in the Republic of Croatia was conceptualized, which singled out the following key factors: macro environment and regulation, sources of creating value in road transport and logistics strategies of the borderline industries. The analysis of the macro environment and regulatory framework established that the state largely influences the competitiveness of the road freight transporters with different regulations. It is necessary to adopt regulations that will eliminate the existing discrimination on this market. Primarily, it relates to the differences in the fixed costs that occur from paying the insurance policy for the vehicle according to the headquarters of the firm. For a firm to choose its strategy, it is crucial to define if the firm will operate on the domestic market alone, or does it want to position itself on the foreign market as well.

Croatian road freight transporters have over the last years been more and more oriented towards the foreign market because the critical period has shown that there is much more serious and stable demand for their services. Companies from the borderline industries are directing themselves towards the process of externalization of the logistics activities, i.e., they hire firms that have transporting services as their primary activity. In the last years, the need for expansion of the services has been growing and it is imperative that they offer additional services alongside the primary service (transportation). For the successful long-term positioning, it is important that a firm has clearly defined the market it wishes to operate on, that it adequately manages human resources and follows the changes in the environment. Owing to their heterogeneity, human resources can offer a firm the possibility of building competitive advantage.

REFERENCES


The Peripheral Literary Myth as a Way to Cope with Workplace Flexibility

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Abstract

This article uses a concept of “organizational historiography” as a way of critical reading the business past, including the literary representations of this past. The author analyzes – as a particular example – some historical contexts of narrations about workplace flexibility as a human challenge. Article refers to a psychological narrative about flexibility accumulated in the early 90s. in Protean Self-concept by Robert Jay Lifton and followed by the contemporary concepts of Resiliency. As the main themes the text outlines the selected literary antecedents of struggle with workplace flexibility on the example of belles-lettres. The author focuses on the intercultural, yet provincial, myths of “Lozdremensch” and “Silesian fate” that was developed in the belles-lettres, which focus of the experiences of the people who were living on Polish territory at the turn of nineteenth and twentieth century and later. According to the author, these myths carries the narrative of a cultural heritage, valid also (or even especially) regarding psychological problems of workplace flexibility today. Such reading of the novels, poetic essays and stories seems to be consistent with the Deirdre McCloskey’s idea that nothing like the work of writers helps to understand and “calibrate” economic reality.

Keywords: Organizational Historiography, Workplace Flexibility, Resilience, Literary Representations of Economic Reality

1. Introduction: Literary Narrations about the Past and Psychological Issues of Workplace Flexibility

The article uses a concept of “organizational historiography” as a way of critical “reading the business past” – including the literary representations of this past – while avoiding both “organizational forgetting” and “presentism”. This relatively new sub-branch of organizational study is practically orientated and can serve reflective managers as a source of inspiration, warnings and – more generally – development of contextual thinking by critical enriching of the reading of various stories about the past, including the past representation in belles-lettres. It is worth reminding that history of historiography is a branch of sciences about the past, which critically reflects on researching, writing and teaching (including also promotional activities) history. In Poland, the community of historians of historiography, associated with Andrzej Wierzbicki, has for several years intently incorporated organizational issues into the scope of their interests. Summing up, according to the terminology suggested by Monika Kostera, based on scholarly practices of Western authors (e.g., [5], [2], [17]), organizational historiography means using the cognitive apparatus of history of historiography both for research purposes to cater for the needs of management, as well as in order to enrich the reading of publications concerning the past (and various other stories about it) by a reflective manager, who thereby seeks inspiration for his/her own practice [11].

The second reference point of this article consists of a psychological narrative about flexibility, accumulated from the early 90s. in “Protean Self” concept by Lifton [6] and followed by the
contemporary concepts of Resiliency [20]. Flexibility category in psychological aspect seems to be deeply associated with highly traumatic challenges, which are tested both by Lifton (in his studies of “crushing” history phenomena) and by current experts in Resiliency (see the work about psychological consequences of World Trade Center Attack, [20]).

More than twenty years ago, Lifton [6] described the “The Protean Self” which, in his opinion, is a characteristic of the modern man. That is why man is capable of unexpectedly high flexibility and variability, even fluidity, of behavior and psychological processes. In this context, Lifton wrote about resilience of the human psyche in the era of “fragmentation”. However, recent research on psychological difficulties in changing human behavior, habits or beliefs - especially in organizations [3], makes us treat the mentioned theoretical construct, proposed by Lifton (“The Protean Self”), as a description of a certain potential rather than as traits given once and for all. Furthermore, these are the potentials that need to be spent within reasonable limits, and yet there is no precise research data defining these boundaries. However, this does not diminish, but, on the contrary, enhances the importance of the modern man’s resilience. The term “resilience” was borrowed from engineering science, where it stands for the physical resistance of materials, expressed by rapid return to their original state after deformation. Initially, the term was used by clinical child psychologists, then, the concept was gradually adopted by theorists and practitioners working with adults, indicating a type of psychological toughness. It is not about resistance in terms of hardness (“managers do not cry”), but – generally speaking – a flexible approach to stress, easily returning to normal functioning after a failure or misfortune, after encountering adversity, including traumatic experiences ([19]; [17]; see also [9]). Currently, there is a discussion among psychologists whether it is necessary to commonly implement training in resilience, at least in professional groups that particularly need it, or whether the natural ability to achieve this competence in individuals should be checked first, and help be given only to those, who have deficiencies in this area (cf. [19] vs. [17] and [20], [12]). Another point of view, between these options, also emerges. There is a recommendation that resilience of the particular person could be improved spontaneously by reading belles-lettres. Zvi [24], the American psychiatrists with Jewish-Polish roots, mentions, for example, how his love for reading books helped him cope with dramatic life experiences related both to family problems and to the twentieth century history.

The cultural look at workplace flexibility also shows – toutes proportions gardees – the traumatic side of this phenomenon in the context of modernization processes. This article suggests treating the current narration promoting flexible work, both in the main management and economic theories, as well as in opinion journalism, as an up-to-date manifestation of a cultural process, constituting the core of modernization (previously known as the industrial revolution). The transition from farm to factory meant not only uprooting, as Erich Fromm wrote many years ago, but it also brought about a lot of workplace insecurity both from employee as well as employer’s perspective. Writers were quick to spot that phenomenon and the speed of their reaction depended solely on the development of modernization processes in the respective countries where they wrote. Further market changes followed, insecurity developed like cancer, until mainstream management strategies began to turn it into a virtue. Reaching for belles-lettres, in particular those created outside of globalization centers aims to “push through” another point of view.

Article outlines the selected literary antecedents of struggle with workplace flexibility on the example of belles-lettres, which describes the particular of Eastern Europe experiences. It is advised to focus especially on the pro-entrepreneurial and intercultural, yet provincial, myth of “Lozdremensch” that was developed in the belles-lettres emerging in Polish, German and Yiddish at the turn of nineteenth and twentieth century on broadly speaking Polish land. On the examples of writings of Wladyslaw Reymont (“The Promised Land”), Joshep Roth (“Hotel Savoy”); Isaac Bashevis Singer (“Scumn” and “The Estate”); Israel Joshua Singer (“The Brothers Ashkenazi”), Sholem Alejhem (various novels and stories), Symch Symchowicz (Stepchild on the Vistula) and Charles Dedecius (“European from Lodz”) it could be assumed that the Lodzermensch myth can be read as a tale, grown on the Polish, provincial territory, of a businessman and worker as well more or
less aware of the tension between the “human factor” and the struggle for profit, who without a doubt faced with such challenges as previous versions of workplace flexibility (compare [10], [13]).

“Lodzermensch” has been formed and experienced its “golden age” during the first wave of globalization (XIX/XX). So, cultural heritage carried by the literary narrative of the myth may prove to be important also today (e.g., struggle with the tension between the requirements of the pursuit of profit and respecting basic cultural values, which were/are embodied in spiritual traditions).

According to the author of the article, this myth carries the narrative of a cultural capital, valid also (or even especially) regarding workplace flexibility.

While researching this topic in belles-lettres, the author realized it was necessary to account also for another myth, created on the broadly understood Polish territories, closely related to that of Lodzermensch, i.e. the literary image of experiences of the inhabitants of Silesia. For the purpose of this text, the myth has been called “Silesian fate” and it is represented by “Anakonda” by Goetel [4] (1964/2014, set in the inter-war period) and “The Fifth Part of the World” by Kazimierz [7] (2010, a saga encompassing timeframe from the 19th century until the contemporary times). The “Silesian fate” is characterized by multiculturalism and the temporary nature typical of the Polish-German borderland inhabited historically also by Jews.

The cultural reading of the “Lodzermensch myth” and “Silesian fate” seems to be consistent with the Deirdre McCloskey’s idea that nothing like the work of writers helps to understand and “calibrate” economic reality [8]. The term “myth” is understood here after Michel de Certeau [1], which defines it as a “fragmentary discourse connected with varied dealings of some society, which express them in symbolic way”.

2. The Literary Vision of the “Culture of Temporariness”

According to the author of this article, the most complete representation of temporary work as a source of suffering of various market players, is conveyed by the metaphor of a hotel presented by the Austrian writer Joseph Roth in his first novel “Hotel Savoy” written in 1924. The action of the novel is set in Lodz, a city in central Poland, established in the first decades of the 20th century solely as an industrial center, whereas the industry itself was originally developed mainly by newcomers from German countries, Jews, and also by Poles. The abovementioned city, referred to as the “Polish Manchester”, helped coin the “Lodzermensch myth” (even though this phenomenon was not limited to Lodz), stressing the triadic – in national terms – structure of the myth1. When Roth wrote about Lodz after World War I, using grotesque style, the city’s past was marked with economic prosperity. “Hotel Savoy” (which has a real counterpart that exists until this day) is inhabited or visited by representatives of different “market participation” echelons. The higher up their flats are located, the lower their material and social status. The people living on the top floors try to earn their living by working for those living on the lower floors, or for the guests visiting the hotel restaurant.

The symbol of degradation, manifested by “getting” increasingly worse temporary jobs just “to survive” are young girls whose “professional career” is crowned by becoming naked dancers, performing for factory owners in the above-mentioned restaurant.

Henry Bloomfield has been largely successful and is at the very top of the social class structure. He no longer lives in Lodz, he only comes here from time to time from the United States, awaited by others like a Messiah.

“Don’t you know Bloomfield?” – wonders one of the characters of “Hotel Savoy”. Bloomfield is a child of this city, a billionaire in America. The whole city is calling: “Bloomfield is coming!” “I swear I talked to his father like I’m talking to you now” ([15], following the Polish translation by I. Berman).

The above-mentioned character from Roth’s novel embodies the fulfillment of the “American dream” and, at the same time, shows how the global business model related to the American dream gives rise to the also global workplace flexibility. When Bloomfield is to arrive in Lodz, local entrepreneurs virtually suspend their business activities, waiting to meet him at “Hotel Savoy”. Even
the tiniest business decision depends on what Bloomfield will say or do and his intentions remain impenetrable and almost mythical to everybody. In the meantime, the billionaire comes to Lodz only to visit his father’s grave… he has absolutely no plans regarding any business activity.

The most elaborate yet concise description of the conditions of “temporary work culture” comes from an inhabitant of the higher floors of “Hotel Savoy” – Abel Glanz. He’s a minor money-saver who combines an artistic and financial flair. Abel is a prompter at a small theater, who dreams about becoming a director, but for the time being exchanges currency. He provides a very realistic description of his “way of life”, summarizing the deepest conditionality of the “fashion” for temporary work, current until this day – i.e., the unpredictable character of the financial markets.

“Trading currency is not easy (…) You have to risk your life – this is the Jewish destiny (…) This is an enchanted thing.” ([15], following the Polish translation by I. Berman).

It’s hard to defy the impression that the cited excerpt reveals important characteristics of the participants of the “Lodzremensch” myth, in particular the poor ones, who dream only about its fulfillment. The point is to be able to phrase slogans of universal dimension, which seem to be words of wisdom, providing natural summary of everyday struggles with the free market reality and its temporary character. Therefore, it was not only in small towns as Słomiński used to write, but also in the wealthy Lodz, that a shoemaker was a poet and a watchmaker (or currency trader) was a philosopher.1

Many years later, just after World War II, the Warsaw poet Jerzy Zagórski in his “Financial mediations” dealt with and broadened a reflection very similar to the cited one, in one of the first literary attempts at presenting the phenomenon of contemporary financialization, seen from the perspective of peripheries (the cited text was written during the author’s trip to the south of Germany in 1945):

“Money that’s based neither on gold (respective banks don’t have it) nor on resource rent as physiocrats would want it, nor on coal (Polish projects after World War I), nor even on some determined obligations understandable to an average person receiving the money (…). It’s like some gigantic poker game. Colorful pieces of paper moved around the map of the world. If we took a huge photo of Europe, with rays that could penetrate the content of human pockets, we’d see a thrifty anthill-like frenzy of means of payment across Europe. It would be highly engaging, just as roulette with a ball in the form of living organisms capable of thinking” (Zagórski [22], reprinted in Zagórski [23]).

The “insecurity associations” spotted by Roth, that connect the rich and the poor – the owners of different capital, with those, who have only work on various levels (or not even that) – took on an international dimension in Zagórski’s work. It is worth reading the excerpt from “Meditation…” cited below, forgetting about presentism or historical peculiarities of the presented reality and treating the text as a metaphor of the processes that – among others – led to globalization of temporary work.

“The players are no longer the rich countries, as it may seem, because the currency leaks to the weak ones. The economic circle, propelled by the pockets of emigrants and soldiers – circulation of food and vodka.” The essay writer suggested that, to a certain extent, the “purchasing power of our (i.e., Polish – T.O.) society, its ability to provide itself with the assets and items, is based on high prices of vodka and food on the free market and low value of the German mark when exchanged into zlotyes”.

The literary myth also outlines the final consequences of the “culture of temporariness”. “Hotel Savoy” ends with a vision of burning the building down as a result of riots that cause “plenty of victims” [15]. The characters who survived, leave Lodz, still dreaming their American dream. Aber Glanz says:

“When I come to my uncle in New York…”

I think that Zwonimir (a friend of the main character, who went missing during the riots – T.O.) would say now “America”. Just: “America” (Roth [15] following the Polish translation by I. Berman).
3. The Literary Discussion with “American Dream”

The Silesian version of the discussed myth, which came a bit later than that reflected in Roth’s novel written in his youth, is devoid of overseas illusions. It provides a description of a collective memory of a “wave of poverty coming to America at the end of the twenties” (of the 20th century, i.e. not long after the time in which the action of “Hotel Savoy” was set – T.O., [7]).

An emigrant’s dream-come-true may be impersonated by the character of Bruno Liszek, who made a business career in the U.S. and Canada and who later came back to his home town “for a month (…) to find a new wife from Silesia. He calculated, that she would be better than his former wife, because she would be much cheaper (…). Throughout all those years he never read anything besides what’s printed on banknotes. He converted everything into dollars, as if a roulette mentality had been implanted in him” [7]. It’s therefore possible to fully adapt to the temporariness resulting from the instability of the financial world, that is documented by professional success yet comes at the expense of extreme cultural depletion. “I listened to the stories of the balding red-haired man as to some dreary fairy tale” says the character in “The Fifth Part of the World”. “Besides converting everything into dollars, there was no other topic for discussion with him. His head was as empty as a dead dog’s!” Common-sense reasoning, typical of Kutz’s novels, allows for a deeper interpretation of the cited excerpt, than that of a swan song of an author from the intelligentsia circles “bearing a grudge” against successful people. It rather points to the threat of the “temporary work cult” that has so far escaped the discerning eye of the authors of specialist books devoted to the subject matter. This cult threatens to destroy the intellectual culture as collateral damage, in the process of adapting to the “commercial roulette”. The famous work of Readings [14] titled “The University in Ruins” fits into the framework set by the above-mentioned fear, that found its representation in the provincial belles-lettres. After all, why cannot the likes of Bruno Liszek, after achieving ultimate success in the business world, become “healers” of the academic world, which is troubled by plenty of organizational and financial problems.

Friderick Goetel, author of “Anakonda”, presents the “American dream” in the Silesian province in the inter-war period literally as a “ghostly fairy tale”. He clearly shows that this dream, which from the provincial perspective boils down to over-valued orientation of all the activities towards generating profits for an anonymous entity (frequently located overseas), brings about the inevitable temporariness affecting both the workplace, as well as company management. “In the frenzy of work, few realized the gravity of the process taking place in Zagłębie (the part of Silesia – T.O.), when after the end of the great post-war crisis, mines and factories began regaining their momentum (…). Blocks of shares, pulled by an invisible hand, kept moving, presidents and owners kept disappearing to give place to representatives of some new, anonymous ownership title, who frequently could not explain who they were actually representing.” [4]. The mine headed by director Radziejowski was impacted by the above described processes and acquired by an American concern – the eponymous “Anakonda” – which forced it to embark on an over-exploiting production interfering with stable business operations and leading consequently to artificial fluctuations in employment. Mining shafts which, until then, represented a symbol of stability, changed their metaphoric meaning. The director, who, until recently was keen on the “healthy, dynamic rhythm” of the mine’s equipment, now “listened to it carefully with anxiety, trying to fish out all the interruptions, whistles and scrunches (…). As a matter of fact, the mine had its special and exploited place that was capable of cooperating with the rest of the organism only for some time. Which one of them was to be the first one to disobey? Where would the lethal blow come from? Why wasn’t the old factory allowed to rest for a while? Why weren’t its painful defects taken care of?” [4].
4. Human Beings in the Face of the “Culture of Temporariness”

The primary victims of the “culture of temporariness” are people. An old, honored miner Gugała, a minor character in “Anakonda”, dies as a result of an accident, having received no long-term social help. His family is left virtually deprived of means of subsistence. This incident is reminiscent of the most dramatic demonstration of “employment temporariness”, i.e. the relatively short period of work attributed to the short life of laborers forced to work in conditions posing a threat to their health.

Employees of the brush factory in Lodz, described in “Hotel Savoy”, had no choice but to inhale the lethal dust, because the owner of the enterprise preferred to pay a “double child benefit” rather than follow health and safety rules. Miners and all the people living in the vicinity of Silesian mines or factories faced direct threats to their health. As a result, men working in different “promised lands” lived only to be forty or fifty and then died, leaving their wives and children behind, often without any means of subsistence, unless the family got into trouble earlier because of an accident or unemployment. It is worth remembering this element of the literary myth in times, when contemporary promotion of temporary work is openly aimed at cutting down “social expenses” of the companies.

“Temporariness” also constitutes a burden for the human psyche, which is sometimes too much to take, regardless of the position one has in the company’s hierarchy. The wife of director Radziejowski from “Anakonda”, who tries to improve laborers’ life, yet at the same time is deprived of happiness in her marriage due to her husband’s frustration, commits suicide. The same fate awaits the more sensitive main characters of “The Fifth Part of the World”. Others (applicable to both mentioned novels), leave their small fatherland, emigrate to foreign countries or remain lonely, impersonating temporariness in their life and in their work.

In his last work - the famous “Legend of the Holy Drinker” – Roth [16] makes a dramatic, yet at the same time fable-like reference to the tragic version of the ending of the “Silesian Fate” (first printed in 1939). “The Legend of the Holy Drinker” was later filmed by Ermanno Olmi in 1988. It is worth reminding, that the main character of the short story – Andrzej Kartak (Andreas Kartak in the Olimi’s movie) is a Pole, who emigrated from Silesia. Having killed his lover’s husband (acting in her defense) and doing time in prison, he lost the opportunity to find legal employment. The short story presents Andrzej as an alcoholic and tramp, living under a bridge in Paris. One of the few miraculous events that helped him get money was temporary work. Andrzej got a temporary job, which however did not considerably change his situation. The motif of the hotel is also present in this short story, which is typical of Roth. When the character visits the hotel, he leaves it without some cash, which prevents him from paying off a debt of honor.

“The Legend of the Holy Drinker”, being a fable, is also a kind of metaphor, summarizing the tragic fate of a man “immersed in temporariness”.

But “The Legend of the Holy Drinker” is also a fairy-tail. Andrzej drinks himself to death, but pays off his debt. Above all, he proves to be a man of honor.

Tekla and Jerzy, minor characters of “Anakonda”, choose a vagabond life, yet at the same time they are capable of establishing a lasting relationship and facing life’s adversities together.

A resourceful Marianna from “The Fifth Side of the World”, by coming up with an idea to set up a shop and bringing her husband round, intuitively harnesses the unpredictability of the Silesian fate for many years to come.

The Lodz street, described by Roth in “Hotel Savoy” is vividly reminiscent of the so-called guerilla capitalism, i.e., a form of spontaneous collaboration of people of different material status or level of achievements, who share one common way of thinking and acting when faced with free market reality: “I kept on wondering and saw black groups of swift Jews wearing caftans, I heard loud whispers, greetings, words full of energy and long speeches – feathers, interest, hops, steel, coal, lemons, all that flying in the air, catapulted by lips into the air and targeting human ears”. ([15], following Polish translation by I. Berman).
Unemployed Silesian miners also organized themselves consciously against the temporariness of employment, building clandestine pits, which led to a common framework of activities and customs, that should now be referred to as social and cultural capital. In Goetel’s novel, such initiatives are destroyed by the police. However, prior to that, despite their illegal nature, they win director’s Radziejowski’s appreciation. For him, pacification of miners – makers of the bootleg pits – by the police is almost like a personal tragedy. His quandary gives hope for a pact against the “culture of temporary work” made in the spirit of the contemporary understanding of solidarity. This issue, however, goes too far beyond the framework of these considerations.

Even in its rather pessimistic, Silesian version, the provincial literary myth is not only an accusation or expression of helplessness. It also carries some hope through the personal potential of at least some of the characters. Potential, that defied even the “steam roller of temporariness”.

5. Conclusions

It is the role of potential readers to evaluate whether or not the myths presented in the sample works discussed in this article are still up to date. The author of these fragmentary analyses purports to bring them to an end by voicing an assumption, that the above-mentioned novels and short stories offer an opportunity to build resilience of the contemporary Proteus facing today’s challenges posed by the hegemony of temporary work. Maybe it would be reasonable to verify the validity of the following the porte-parole thought of the author of “The Fifth Side of the World”, according to which “a half of each human being comes from books” [7]. If this was the case, then this article would fully accomplish its goals.

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Contributions and Limits of the Loans Guarantee System for Small and Medium-Sized Enterprises (Smes): Case of the Central Guarantee Fund (CCG)

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Summary

SMEs have always suffered from the problem of access to finance preventing them from growing and even more from failing to play their role fully especially when it comes to their contribution to the creation of the value added which remains very timid (not exceeding 20%). The difficulty of accessing finance has become more acute with the advent of the financial crisis that has led to tightening loan conditions. To remedy this, in 2009, banks began to apply the internal rating system, which aims to treat SME loan files objectively and more fairly. To reinforce this action and increase the chances of SMEs, The Central Guarantee Fund undertook, from the same year, to support this category of companies by making available to their banks, the required guarantee.

Our research paper consists then to examine the contributions of the Central Guarantee Fund, in other words, to verify if this guarantee fund was able, through its two development plans (2009-2012 and 2013-2016), to allow for enough SMEs to easily have the loan they need.

Key words: SME financing, guarantee system, CCG contributions, CCG limits

Introduction

In Morocco, as well as internationally, SMEs has always suffered from the problem of access to finance, which they consider to be the main difficulty that prevents them from growing and sometimes even continuing to exist.

Faced with this situation, actions have been taken to simplify the introduction of the SME to the stock market and thus allow it to benefit from the diversification of its sources of financing. But practice has shown that this market remains relatively demanding and weakly attractive and cannot therefore be an alternative to the banking market.

For this, the public authorities didn’t stop looking for solutions to improve the relationship between the SME and the bank. Then, they demanded, on the side of the banks, the adoption of the internal rating system which consists in evaluating the SME on the basis of a tool that take into account its specificities, thus confirming that “beyond the prudential objectives which are the fundamental purpose of the Basel II system, its implementation taking into account the specific characteristics of SMEs, testifies to the importance of the integration of this category of companies in the financing circuits of the economy” (Bank Al Maghrib, 2007) and on the side of the SME, the respect of the rules of the code of good practices of governance in order to palliate the problem of asymmetry of information which pushes the banks to behave reluctantly in front of the requests for loans expressed by the SMEs because, as Adam, Farber and Michel (1989) and Colot and Michel (1996) argue, the banker or venture capital provider has difficulty controlling the actions of the small firm, especially because lack of transparency of the media.

To complement the actions already mentioned, which aim to facilitate SME’s access to bank loans, the public authorities have set up guarantee funds, which is mainly the case with the Central Guarantee Fund (CCG) which has a main mission to support SMEs in financing. So, the question at
this level is whether the CCG has been able to play its full role? More specifically, has it enabled a large number of SMEs to have the financing they need for their development?

To answer this question, we will focus on the role of the guarantee in the loan transaction, from a theoretical, practical and also empirical point of view. In a second line, we will focus on the case of the CCG as the main Moroccan guarantee fund dedicated to SMEs, we will determine its contributions through the study of effectiveness of its development plans. Regarding the third and last axis, it will be reserved for the shortcomings noted in the mission of the CCG regarding the SME.

- **The role of the guarantee in the loan operation**
  The guarantee is an essential component of any loan file. It is even more so when this file is presented by an SME, generally considered a high-risk client.

- **Theoretical and practical framework**
  Bankers give so much interest to guarantee because its own great usefulness both for deciding the granting of loans and for stimulating its repayment.

- **Before granting loan**
  The primary role of the guarantee is to help the bank to better resolve the asymmetry of information. In this respect, it is seen as a signal because it is more costly for poor borrowers who are more likely to default, but also for who are more likely to lose the guarantee, is higher (Bester, 1985; Chan and Kanatas, 1985; Besanko and Thakor, 1987). In the case of good-quality borrowers, they are more likely to agree to provide guarantees in exchange for a lower interest rate on the loan than poor borrowers (Blazy and Weill, 2006). The guarantee serves as an instrument of separation between good and poor quality borrowers.

  The SME can be considered as a poor borrower. She does not usually provide its own bank with all the information requested. To fill this gap, the bank is obliged to ask for guarantees. As Bester (1994) points out, the use of guarantee is a classic solution to the problems of adverse selection and moral hazard. It is an action that empowers the borrowing companies, it pushes them to carry out their project in order to be able to repay the loan received and subsequently recover the goods given as a guarantee.

  Banks only agree to grant loans to companies that provide the guarantee to cover the risks associated with the loan transaction. This is not an easy thing for SMEs that “have fewer guarantees to offer than larger companies. They may need to provide more guarantee than the latter for the same amount of loan taking into account a low survival rate of the company”(Ngongang, 2015).

  The guarantee plays a second role that relating to the determination of the interest rate. As such, it allows to determinate a better pricing of borrowers according to their quality. A bank can thus discriminate against borrowers by offering them the choice between a secured loan with a low interest rate and an unsecured loan with a high interest rate (Blazy, Weill, 2006). In other words, when the guarantee presented by the company is large, of great value and of a high level of security, the interest rate fixed by the bank is relatively low and aims to fulfill the function of “profit”. Otherwise, that is to say that the guarantee is of average quality, the bank is then obliged to apply a high interest rate in order to cover the risk of default of its client and, also, to achieve a profit.

- **After granting loans**
  When the claim on a customer becomes an outstanding claim, that is, the repayment has not occurred for at least three months after the due date, the bank must comply with Bank Al Maghrib’s requirements that specifies that “pre-doubtful, doubtful and compromised debts must give rise to the constitution of provisions” (Bank Al Maghrib, 2002). These, i.e., provisions, represent the cost of counterparty risk that the bank has an interest in controlling so that it can preserve its net banking income and, subsequently, improve its profitability. Thus, and thanks to the guarantee received, the bank manages to reduce the amount of the provision, the calculation of which is based on the deduction of a guarantee, and also the reserved amounts (Bank Al Maghrib, 2002).

  In the event that the receivable becomes uncollectible, the taking of guarantee allows the bank to reduce the loss incurred. The guarantee gives the bank a right to specific assets (Blazy and Weill, 2006).
Empirical Verification

Numerous studies have focused on the empirical verification of the theoretical arguments about the role of guarantees in bank loans. The majority of them proved the importance of the guarantee in reducing the loan loss. This is mainly the case of:

1. Berger and Udell (1990) fund a positive relationship between guarantee and the risk of the loan, which encourages banks to demand more guarantees from higher-risk companies and apply higher interest rates to them.
2. Jimenez and Saurina (2004) noting that the probability of default is greater for secured loans, which confirms the assumption of the observed risk that the guarantee is required to cope with the poor quality of the borrower.
3. Jimenez et al., (2006) stating that only companies experiencing financial difficulties are required to submit more guarantees for loans.
4. Blazy and Weill (2006) who find that banks charge higher rates and require more guarantees from risky companies.

Regarding the role of the guarantee in resolving adverse selection issues and when it was overturned by Blazy and Weill (2006) and Weill and Godlewski (2009), Berger et al., (2011), have succeeded in validating it by noting that riskier the borrower, the more the bank requires guarantees to mitigate the problem of moral hazard. These authors add that the guarantee can only be a signal if there is an ex-ante informational asymmetry.

Regardless of the analytical framework considered (theoretical or empirical), the guarantee is mainly used to reduce the loan loss in case of default. It is more imposed on SMEs (considered as high-risk entities) that generally fail to respond positively, hence the creation of the central fund guarantee (CCG).

Contributions from CCG Programs

The CCG is a public institution having a financial nature. As a guarantee fund, it is one of the types of guarantee schemes that can be determined according to the scope of the activity (retail guarantors, wholesale guarantors and portfolio guarantee), the guarantee (direct guarantors and indirect guarantors or guarantors) or the nature of the entity (guarantee companies and guarantee programs).

The CCG was created in 1949 with a mission to guarantee the repayment of loans granted by banks to public or private companies.

In the case of SMEs, the CCG only began to be interested in them in 2009. Such guidance is part of the government’s efforts to support and promote this category of companies. Certainly, the CCG is seeking, through its offer, to allow loan files submitted by SMEs to obtain a good rating and benefit from an acceptable interest rate. From this perspective, the CCG has developed a first development plan covering the period 2009-2012 and was structured around the following three pillars:

- A generic product offering that covers the life cycle of the SME;
- A new partnership with banks based on a thorough review of processes;
- A regional deployment for greater proximity with banks and businesses (Ministry of Economy and Finance, 2013).

The CCG was able to achieve the objectives of its development plan with a completion rate of 100%.
Table 1. Achievements of the development plan 2009-2012

<table>
<thead>
<tr>
<th>Synthetic economic indicators</th>
<th>Achievements 2009-2012</th>
<th>Annual average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee Commitments in MM DH</td>
<td>5,54</td>
<td>1,385</td>
</tr>
<tr>
<td>Bank loans mobilized in MM DH</td>
<td>9,98</td>
<td>2,495</td>
</tr>
<tr>
<td>Co-financing commitments in MM DH</td>
<td>0,74</td>
<td>0,185</td>
</tr>
<tr>
<td>Number of VSMEs *(2/3 of which are VSE **)</td>
<td>5200</td>
<td>1300</td>
</tr>
</tbody>
</table>

Source: CCG Activity Report, 2016

* VSME: Very small, Small and Medium Enterprises. ** VSE Very Small Enterprise

The very successful results of this first plan of 2009, which prove its effectiveness, encouraged the institution to adopt a second and even more ambitious development plan in 2013, spanning four years (CCG, 2016).

Table 2. Objectives and Achievements of the 2013-2016 Development Plan

<table>
<thead>
<tr>
<th>Synthetic economic indicators</th>
<th>Objectives 2013-2016</th>
<th>Achievements 2013-2016</th>
<th>Achievement rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee Commitments in MM DH</td>
<td>10</td>
<td>19,43</td>
<td>194%</td>
</tr>
<tr>
<td>Bank loans mobilized in MM DH</td>
<td>18</td>
<td>38,87</td>
<td>216%</td>
</tr>
<tr>
<td>Co-financing commitments in MM DH</td>
<td>0,99</td>
<td>2,77</td>
<td>278%</td>
</tr>
<tr>
<td>Number of VSMEs *(2/3 of which are VSEs)</td>
<td>8600</td>
<td>17968</td>
<td>209%</td>
</tr>
</tbody>
</table>

Source: CCG Activity Report, 2016

Table 2 shows that the CCG’s second development plan is more effective than the first. It has managed to far exceed its forecasts by recording fairly high completion rates, between 194% and 278%.

Table 3. Comparison between the 1st and the 2nd development plan

<table>
<thead>
<tr>
<th>Synthetic economic indicators</th>
<th>Achievements 2009-2012</th>
<th>Achievements 2013-2016</th>
<th>variation rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guarantee Commitments in MM DH</td>
<td>5,54</td>
<td>19,43</td>
<td>251%</td>
</tr>
<tr>
<td>Bank loans mobilized in MM DH</td>
<td>9,98</td>
<td>38,87</td>
<td>289%</td>
</tr>
<tr>
<td>Co-financing commitments in MM DH</td>
<td>0,74</td>
<td>2,77</td>
<td>274%</td>
</tr>
<tr>
<td>Number of VSMEs *(2/3 of which are VSEs)</td>
<td>5200</td>
<td>17968</td>
<td>245%</td>
</tr>
</tbody>
</table>

Source: Made by us

Table 3 shows that the CCG’s achievements in favor of the VSMEs have evolved considerably between 2009-2012 and 2013-2016, thus making it possible to favorably influence the Moroccan economy and achieve the following results:

- 2/3 of creations and ¼ of development projects registered their first access to loans thanks to the CCG guarantee;
- The control of the loss ratio at 2.6%, which proves the effectiveness of the CCG’s selection mechanisms that have made it easier to access financing for only viable VSMEs;
- Guarantee SMEs have managed to improve their overall performance: Turnover up to 5%, growth of the added value by 6% and increase in the payroll by 12%;
- An average growth of 33% in the volume of loans;
- The discounted value of the benefits of the institutional guarantee shows a net benefit/cost ratio of 1.5 Dirhams for each Dirham spent over the entire economic cycle (CCG, 2016).
The CCG’s Limitations on SME Financing

Many researches have revealed the inability of guarantee funds to simplify access to finance, especially for SMEs:

- “Today, more than 2,250 loans guarantee schemes exist in a wide variety of forms in nearly 100 countries, but most are small, local, weak and failing sustainability” (Davies, 2007);
- “Currently, no warranty company for micro, small or medium-sized borrowers has priced its guarantee at a price that allows it to maintain its capital level ... losses are often erased either by a donor or a flow Continuous subsidy ... SMEs and micro-entrepreneurs do not need guarantees, but rather a different appreciation of their loan and an appropriate loan monitoring technology”. (Gudger, 1998)
- “... creation of guarantee funds which undertake to indemnify in case of default. In various countries, particularly in Central Africa, this did not work because the granting of a guarantee was accompanied by a less strict choice of investment projects and a lower rate of recovery of outstanding payments”. (Kauffmann, 2005)

Nevertheless, a study on the Italian mutual guarantee consortia demonstrates the relevance of the Italian Public Guarantee Fund for SMEs, “in terms of widening access to the bank loan ... The empirical demonstration presented in the analysis shows that the Italian system has reached a certain level of efficiency to reduce the cost of loans for SMEs and their financial constraints ... Empirical data ... indicate that by a good selectivity of targeted SME groups, individual beneficiaries and coverage ratios ... unlike other public funds, the Italian Fund was able to manage the default rate and contain the public subsidy element that is required to maintain its sustainability” (Zecchini & Ventura, 2008).

In the case of Morocco, as we have already stated above, the CCG’s production between 2013 and 2016 greatly exceeded the objectives initially set with very satisfactory achievements, which raised the guarantee fund at the head of guarantee institutions across Africa and MENA regions. But despite this, the CCG’s action vis-à-vis SMEs still has shortcomings:

1st insufficiency:

It is true that the CGC’s intervention in favor of the VSMEs is effective. However, if we limit ourselves to the case of SMEs, we can argue that those who have benefited from the offer of the CGC are of a very limited number, even insignificant. To show it, we must first deduce the total number of SMEs:

In 2016 and according to the data of the Moroccan Office of Industrial and Commercial Property (OMPIC), the number of companies was 466204, therefore, the number of SMEs can be calculated as follows: 466204 x 95% (share of SMEs in the Moroccan economic fabric) = 442 894.

For the years 2015, 2014 and 2013, we based ourselves on the following formula:

\[ \text{Number of SMEs in } N = \text{[number of SMEs in } N + 1 - \text{(creation of SMEs in } N) - \text{failures of SMEs in }N] \]

We must then determine the percentage of SMEs that benefited from the CCG intervention in the total number of SMEs operating in the Moroccan market:
It seems clear that the effort provided by the CCG is more oriented towards small businesses than SMEs. However, it’s that second category of companies that needs more support from the CCG:

- First, to help it solve the problem of excessive guarantees. In this regard, the International Monetary Fund (IMF) specifies that although the value of securities in Morocco is generally lower than the MENA region countries, it remains very high for SMEs. This value represents more than twice of the amount of the loan locating Morocco above the world averages and in the MENA zone.
- Secondly, to enable it to play its full role in the national economy by increasing its contribution to GDP, this has remained stagnant at 20%.

2nd insufficiency:

Compared to the duration of the loans, the CCG’s intervention during the 2013-2016 period has facilitated the access to short term (ST) and long-term and medium term (LMT) loans.

Table 6. Distribution of CCG Guarantee Loans for SMEBs by Duration (in billion DH)

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of guarantee bank loans</td>
<td>4,7</td>
<td>6,7</td>
<td>10</td>
<td>14,4</td>
</tr>
<tr>
<td>Loans at ST</td>
<td>3,2</td>
<td>4,9</td>
<td>7,9</td>
<td>11,4</td>
</tr>
<tr>
<td>Loans at LMT</td>
<td>1,5</td>
<td>1,8</td>
<td>2,1</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: produced by us on the basis of data from the CCG Activity Reports

Table 6 tells us that almost all of the CCG-guarantee loans are operating loans. However, the investment loans constitute the greatest interest towards SMEs, especially those seeking to improve their situation. Indeed, many studies have shown that the low growth of SMEs is mainly due to the difficulties of these companies to obtain financing in the development phase (Becchetti and Trovato, 2002; Krasniqi, 2007; Oliveira and Fortunato, 2006; Pissarides, 1999).

3rd insufficiency:

The intervention of the CCG remains dependent on the decision taken by the bank in granting loans. It intervenes only when the latter appreciates the level of the risk of the entity to finance. “In practice, the entrepreneur first chooses the bank that will accompany him by presenting his business plan. The CCG intervenes after this stage and when the bank has conducted its study and assessed the risk. If the bank decides to go, the CCG co-finances. This is a sine qua non condition” ²

Conclusion

The CCG’s 2013-2016 activity has improved and has had an average annual growth rate of 21%. This was happened to be more possible thanks to its new orientation, which has become more focused on financing SMEs than on individuals. But despite this, the results obtained are unsatisfactory. In fact, loans to SMEs accounted for only 33% of outstanding loans to non-financial businesses. Their weight has even decreased by three points during the years 2014, 2015 and 2016.

Faced with this situation, it was necessary to explore other avenues to help SMEs overcome this difficulty related to the guarantee, we can mention at this level the draft law 18-15 on the security

² The day debate jointly organized between Attijariwafa bank and the Moroccan Association for Industry and Automotive Trade, Tuesday, March 28 in Casablanca, under the theme “the automotive ecosystem and support for investors in this area.”
rights that aim to allow SMEs to pledge new guarantees and expand the guarantee base to offer to banks.

REFERENCES:

Attractiveness of Large Oil Companies for External Investors in 2004-2013

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Abstract

This paper examines the relationship between the investment attractiveness of the oil companies and the various indicators of their financial and economic performance. The research follows a quantitative approach covering 22 large oil companies from 12 countries in 2004-2013. The results of the study show that when investors make decisions about investments in oil companies, such factors as the change in operating expenses per one barrel, level of sales per employee, and the presence of sufficient reserves, but not the current financial performance of oil companies, play a decisive role. This is due to the specific features of the oil industry, such as the long-term and risky nature of investments, and the great importance of oil deposits.

Keywords: Oil & Gas industry, Firm Performance, Oil Companies, Crude Oil

1. Introduction

The current economic situation, marked by the presence of unstable external and domestic economic environment, and falling oil prices, forces companies worldwide to take urgent measures to improve their performance in order to survive in the market. “The steep drop of oil prices from over $100 a barrel to below $50 in the spring of 2015, caused serious financial difficulties for oil companies, as well as increases their financial commitments, which many of them cannot exercise” [1].

The structure of analyses is as follows. Section 2 represents the literature review. Section 3 gives the methodology of research and description of data. Section 4 describes the construction of an empirical model. Section 5 gives the interpretation of the empirical results. Finally, section 6 concludes.

2. Literature Review

In the market economy, it is equally important to obtain satisfactory financial results as well as validation of the capital market, through the estimation of the market value of the shares of listed companies. The efficient markets theory (EMT) supports the idea the market accurately reflects information about the economic and financial situation of companies [2]. The view was that when information arises, the news spreads very quickly and is incorporated into the prices of securities without delay [3]. However, investors are not always rational, as they do not always correctly interpret the information and have short-term gains in the foreground. As a result, pricing irregularities and predictable patterns in stock returns can appear over time and even persist for short periods of time [3].

Because of availability of a wide range of oil and gas companies, investors have to relate to some simplified indicators that can help them in selecting the most appropriate investment solutions.
2.1 A simple indicator of investment attractiveness of oil and gas companies

All of the performance measures can be considered under the concept of “value-based management”, whereby the performance of the company is measured by its return to the shareholders, which includes dividends paid to the shareholder and the capital appreciation of the company [4]. It is expected that the greater the value to the shareholder, than the better its performance is (Fig. 1).

Fig. 1. Levels of analysis and different types of valuation metrics for oil companies

Sources: Developed by the authors on the basis of Harper [5].

The price/earnings (P/E) ratio measures the amount that investors are willing to pay for each dollar of a firm’s earnings. The level of this ratio indicates the degree of confidence that investors have in the firm’s future performance. The higher the P/E ratio, the greater is the investor confidence [6].

McCormack and Vytheeswaran [7] tested total shareholder return of the largest oil and gas companies such as EBITDA (earnings before interest, tax, depreciation and amortization), RONA (return on net assets), after-tax earnings, ROE (return on equity), and free cash flow, and financial indicators and found very weak or non-existent relations. More robust relations were established when Economic Value Added (EVA) and reserves were introduced in the model.

Since the late 1990s, a commonly used measure to assess shareholder return is the return on capital employed (RoACE), which is defined as net income adjusted for minority interests and net financial items (after tax) to average capital employed. However, this indicator has a number of problems [8].

RoACE falls in period of investments, and boosts in periods of disinvestments. This causes strong stimulus of oil companies to short-term behavior, which means cost cutting and value-maximization of existing reserves instead of investments in new assets. The perception of RoACE as an important value-driver is not supported by the model, build by Osmundsen, and et al., [9] on 14 major international oil and gas companies for the period 1990-2003. Another metric used to evaluate the performance of oil companies is the enterprise value/earnings before interest, tax, depreciation, and amortization (EV/EBITDA). This indicator relates the value of a company and allows judging the effectiveness of its business, regardless of its debt burden, and the method of depreciation [10].

Nevertheless, for oil companies the enterprise value to earnings before interest, tax, depreciation, amortization and exploration expenses (the EV/EBITDAX index) is a better indicator. It is similar to the EV/EBITDA index but neutralizes exploration expenses. It is widely used in the US in order to eliminate the effect of differences in accounting for exploration expenditures.
The production per day (EV/BOE/D) can be used as another indicator to evaluate a company’s performance, as it is well suited to compare the company with its competitors and allows quickly understand whether it is traded with a premium or a discount. However, this does not consider production on undeveloped properties and the cost of their development [10].

2.2 Possible explanatory factors of investment attractiveness

<table>
<thead>
<tr>
<th>Study</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chua and Woodward (1994), the US oil industry in 1980-1990 [11]</td>
<td>P/E has not statistically significant relations with dividend payout, net profit margin, asset turnover, financial leverage, interest rate, and Beta Future cash flow and proven reserves are statistically significant factors for the stock price</td>
</tr>
<tr>
<td>Petter Osmundsen et al., (2006), 14 international oil and gas companies for the period of 1990-2003 [9]</td>
<td>Variation of the stock price in company valuations is mainly explained by oil price, oil and gas production, and only to some extent reserve replacement</td>
</tr>
<tr>
<td>Victor (2007), 55 oil and gas companies in 1999-2006 from the editions of Energy Intelligence’s Top 100 [13]</td>
<td>Market capitalization as proxy for a company’s performance has strong relations with its total output, and revenues, but not with number of employees and reserves. No strong relationship is observed between profitability and asset base.</td>
</tr>
<tr>
<td>Pouraghajan et al., (2012) [25], 350 companies listed in Tehran Stock Exchange in 2006-2010</td>
<td>A significant positive relationship between the weighted average cost of capital (WACC) and corporate performance (ROA and ROE), between a firm size and profitability ratios.</td>
</tr>
<tr>
<td>Regalli and Soana, 122 listed companies in the Stock Exchange of America in 2002, 2004 and 2006 [26]</td>
<td>Cost of capital (WACC) has a significant negative relationship with growth criteria of earning per share and price to earnings ratio (P/E) but a positive relationship with ratio of market value to book value of equity (M/B)</td>
</tr>
<tr>
<td>Iskakov and Yilmaz (2015) [29]</td>
<td>Price risk has a profound impact on the long-term sustainability in today’s energy market</td>
</tr>
</tbody>
</table>

3. Methodology and Data

As a methodology for assessing the investment attractiveness of a company, we used technique developed by Tolkachenko [30], but improved by us. The proposed algorithm for determining the investment attractiveness of the company is shown in Fig. 2. The calculation of the investment attractiveness of a company is carried out in four stages:
3.1 Stage I: Analysis of the Financial Condition of a Company with the Seven-Factor Model

It is based on using the 7-s factor model proposed Gilyarovskaya and Sobolev [31]. It, in turn, is based on the model of Dupont, but unlike it reflects the impact on the asset’s profitability are not three but 7-s factors (Table 3).

Fig. 2. Algorithm for determining the investment attractiveness of oil companies

Source: Developed by the authors on the basis of Tolkachenko [30]

Table 3. Key indicators of the performance of a company, based on seven-factor model

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Names of variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Net income (= EBIT-interest and tax)</td>
</tr>
<tr>
<td>S</td>
<td>Sales</td>
</tr>
<tr>
<td>CA</td>
<td>Current assets</td>
</tr>
<tr>
<td>SL</td>
<td>Short term liabilities</td>
</tr>
<tr>
<td>A/R</td>
<td>Receivables</td>
</tr>
<tr>
<td>A/P</td>
<td>Accounts payable</td>
</tr>
<tr>
<td>BC</td>
<td>Borrowed capital</td>
</tr>
<tr>
<td>A</td>
<td>Assets</td>
</tr>
</tbody>
</table>
The 7-s factors model shows the influence of various operating and financial factors on the change in the return on assets of the company:

\[ ROA (\text{return on assets}) = P(\text{Net income})/A(\text{Assets}) \]

\[ ROA = \frac{P}{A} \times \frac{S}{CA} \times \frac{CA}{SL} \times \frac{SL}{A/R} \times \frac{A/P}{BC} \times \frac{BC}{A} \]

\[ ROA = a \times b \times c \times d \times k \times l \times m \]

where,

\[ a = ROS = P/S \]

This indicator shows the influence of the price policy and sales of a company on its profit, received in the reporting year. The ratio widely used to evaluate a company’s operational efficiency. It is also known as a firm’s “operating profit margin”.

\[ b = \text{CATR} = S/CA \]

Current assets turnover ratio shows the efficiency of the use of current assets. It measures a company’s ability to generate sales from its assets by comparing net sales with average total assets.

\[ c = CR = CA/SL \]

The current ratio, characterizes the solvency of the company, supposing full realization of its inventories and the return of its receivables. It measures a company’s ability to pay short-term obligations.

\[ d = SL/(A/R) \]

The ratio of short-term liabilities of the company to its receivables. This ratio describes the degree of coverage of short-term obligations of the company’s by its receivables. By analyzing its value and dynamics it is possible to estimate the financial stability of the company.

\[ k = (A/R)/(A/P) \]

The turnover ratio or the ratio of receivables to payables reflects the coverage of accounts payable characterizes the company’s dependence on the creditors and debtors. It can also serve as a security assessment firm against inflation: the smaller the value, the greater the degree of protection.

\[ l = (A/P)/BC \]

The ratio of accounts payable to its borrowed capital, which characterizes the structure of its liabilities.

\[ m = BC/A \]

The ratio of debt capital to assets of the company, characterized its financial stability as a whole, shows the ratio of equity and debt financing sources of the company.

Thus, the 7-s factors analysis shows the current dynamics of the resulting index and the influence of different factors on the increase or decrease of assets return. At the same time, in order to ensure sustainable long-term growth of the company, the following specified performance criteria must be maintained:

1) \( \frac{\Delta S}{S} > \frac{\Delta A}{A} \) – the growth rate of the company’s sales, should exceed the growth rate of its assets. Compliance with this ratio prevents investments in unprofitable assets.

2) \( \frac{\Delta P}{P} > \frac{\Delta S}{S} \) – the growth rate of the company’s net income should exceed the growth rates of its sales. Compliance with this ratio prevents the company from leaving the prospective and profitable market segments.

3) \( \frac{\Delta CA}{CA} > \frac{\Delta A}{A} \) – the growth rate of the company’s current assets should exceed the growth rate of its total assets. Compliance with this ratio prevents the freezing of the funds of the company in long-term assets.

If a company develops a positive trend in return on assets and meets specified performance criteria, it will be interesting to investors. For the evaluation of investment attractiveness of a company, the index of its investment attractiveness is calculated.
3.2 Stage II: Determination of the Overall Index of Investment Attractiveness of the Company

It is carried out by the method of Aniskin [32]. At the beginning, the indices of particular factors changes are calculated and then the integral index of investment attractiveness of the company is determined as the multiplication of the particular indices:

\[ IIA = \prod_{i=1}^{n} IIA_i \]

where \( IIA_i \) – relative index of a particular factor \( i \). The value of the index of investment attractiveness allows investors to conclude whether the firm is attractive or not for investing. If \( IIA > 1 \), then the investment attractiveness of the company is growing for the analyzed period, if \( IIA = 1 \), then it remains unchanged, if \( IIA < 1 \), then the company’s investment attractiveness is reducing.

3.2 Stage III: Determination of the Company’s Need for Investment

The need for investment \( (I) \) required to ensure the expected sales growth, calculated as the difference between the change in net assets, which depends on the process of production and marketing, and the volume of funds raised from internal sources of the company. In mathematical terms, it is the formula:

\[ I_1 = \Delta S \times \left[ \left( \frac{A}{S_0} \right) - \left( \frac{SL}{S_0} \right) \right] - P_1, \]

Where:

\( I_1 \) – the company’s need for additional investment in the next period;
\( A \) – the value of assets in the reporting period, which directly influence the process of production and marketing;
\( SL \) – the value of the company’s short-term liabilities in the reporting period that are in direct proportion to the scale of production and marketing activities of the company;
\( \Delta S \) – the absolute deviation of projected sales \( (B_1) \) from actual sales \( (S_0) \) of the company;
\( P_1 \) – the expected value of net income in the next period, left at the disposal of the owners of the company.

The net profit of the company \( (P_i) \) in the next period is calculated by the equation:

\[ P_1 = P_0 \times S_1 / S_0 \times (1 - t), \]

Where:

\( S_1 \) – sales in the next period, which is found as multiplication of the growth rate of sales \( g = \Delta S / S \) on the volume of sales in the current period \( (S_0) \);
\( P_0 \) – the expected value of the income before interest and tax in the reporting period;
\( t \) – income tax rate.

3.3 Stage IV: Modelling of Economic Value Added (EVA)

After finding the value of investments needed for the development of the company, it is important to determine the cost of raised funds and what growth of company’s market value these investments can provide. It is therefore advisable to calculate the economic value added (EVA). The index is calculated as follows:

\[ EVA = \frac{NOPAT - IC \times WACC}{IC} = \frac{(NOPAT/IC - WACC) \times IC}{(RoACE - WACC) \times IC}, \]

where:

\( NOPAT \) - Net Operating Profit After Tax;
\( IC \) – Invested Capital

The increase of EVA on invested capital \( (EVA/IC) \) occurs if a return on invested capital \( (RoACE) \) is higher than the rate of return of an investor \( (WACC) \) for a given period.

There are possible three relations of EVA/IC with the behavior of investors:

1. If \( RoACE = WACC \), then \( EVA/IC = 0 \). In this case, the market gain of investors by investing in such a company is equal to zero.
2. If \( RoACE > WACC \), then \( EVA/IC > 0 \). This means that the market value of a company exceeds its net assets book value that encourages investors to invest in the company.
3. If \( RoACE < WACC \), then \( EVA/IC < 0 \). This leads to a decrease of the market value of the company. In this case, investors lose the part of invested capital.

The proposed method of evaluation of investment attractiveness of the company since its base laid by two indicators-return on assets and economic value added, takes into account the experience of the company, as well as its expected future activities. However, the ratio \( EBITDAX/ACE \) seems to being a more objective indicator of an oil company’s investment attractiveness than as of \( RoACE \), given the eminent features of these companies as high taxes, capital and exploration expenditures. As \( EBITDAX/ACE \) relates to the company’s earnings per unit of invested capital before interest, tax, depreciation, amortization and exploration costs. This ratio is more effective indicator of the performance of an oil company as it determines its investment attractiveness, regardless of its debt burden, fiscal policy, depreciation method and exploration costs. Therefore, the more precise formula for the comparison of oil companies of various sizes and operating in different countries will be as follows:

\[
EVA/IC \approx EBITDAX/ACE - WACC,
\]

where:

- \( EBITDAX \) – earnings before interest, tax, depreciation, amortization, and exploration expenses accounted only for the successful efforts.
- \( ACE \) – the average capital employed.
- \( WACC \) – the weighted average cost of capital.

On the other hand, instead of \( EVA/IC \) the index \( EV/BOE/D \) can be used. This multiplier is also known as “The price for the current barrel” (price per flowing barrel) and is one of the most important indicators of investment attractiveness of oil and gas companies. The basis of its calculation is enterprise value (enterprise value) and the daily production rate (daily production) in barrels of oil equivalent per day (\( BOE \) Per Day, \( BOE/D \)). It is well suited for comparing a certain company with its competitors [10].

In our study, we use instead of \( EVA/IC \) a proxy indicator of the investment attractiveness of oil and gas companies – the capital cost per 1 barrel of oil and gas in oil equivalent, because it is easy to calculate. It represents the ratio of capital expenditure to the current production of oil and gas for each company in oil equivalent. This indicator includes only capital expenditures. Given that the oil and gas business is a capital-intensive business, where the share of capital costs in total costs accounts about 60%, such an assumption would be quite convincing. Instead of \( WACC \), since such information is difficult to find, we use a number of proxy variables that reflect different costs of investment in oil production in various oil and gas companies.

The data sample includes a set of 22 oil and gas companies of 12 countries (Table 4). As the data sources were used data of various companies included in the Rystad Energy database, as well as data collected from websites, analytical and statistical materials of companies. The name of indicators and methods of their calculation are given in Table 5. Some of them are related to the analysis of national oil companies, offered by Paul Stewens [33].

Table 4. Name of oil and gas companies represented in the sample and their websites

| Repsol (Spain) | Shell (Netherland-UK) | Tatneft (Russia) |
| ExxonMobil (USA) | Chevron (USA) | Gazprom-Neft (Russia) |
| Petrobras (Brazil) | Sinopec (China) | KazMunaiGas (Kazakhstan) |
| BP (UK) | GazProm (Russia) | Eni S.p.A. (Italy) |
| OMV (Austria) | Rosneft (Russia) | Total (France) |
| Pemex (Mexico) | Novatek (Russia) | CNPC (China) |
| ConocoPhillips (USA) | Lukoil (Russia) |
| Statoil (Norvay) | Surgunneftegaz (Russia) |
4. Construction of Verifying Empirical Models

The stability of variables was checked by using ADF technique. All of variables are stationary in levels. The relationship between the firm’s investment attractiveness and its determinants is estimated by the equation:

\[
\ln(\text{capex}_{\text{bar oe d}}) = \alpha_1 * \text{ebitda}_\text{ace} + \alpha_2 * \ln(\text{opex}_{\text{bar oe d}}) + \alpha_3 * \text{int}_{\text{sale}} + \\
\alpha_4 * \text{output}_{\text{cap}} + \alpha_5 * \text{sales}_{\text{cap}} + \alpha_6 * \text{eff}_{\text{tp}} + \alpha_7 * \text{rrr} + \alpha_8 * \text{rpr} + \alpha_9 * \text{debt}_{\text{burd}} + \\
\alpha_{10} * \text{tax}_{\text{burd}} + \alpha_{11} * \text{price}_{\text{risk}} + \alpha_{12} * \text{risk}_{\text{ebitda}} + \epsilon
\]  \hspace{1cm} (1)

Table 5. Key variables of investment attractiveness and methods of their calculations

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description of variables and method of their calculation</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPEX</td>
<td>Capital expenditures in current US dollars</td>
</tr>
<tr>
<td>Capex_bar_oe_d</td>
<td>The capital cost per 1 barrel of oil and gas in oil equivalent per day. It is the ratio of capital expenditure to the current production of oil and gas for each company in oil equivalent.</td>
</tr>
<tr>
<td>Opex_bar_oe_d</td>
<td>Operating expenses per 1 barrel of oil and gas in oil equivalent per day. It is the ratio of current production costs to the volume of oil and gas production for each company in oil equivalent.</td>
</tr>
<tr>
<td>Output_cap</td>
<td>Labor productivity per employee. Is the ratio of the volume of oil production to the number of employees?</td>
</tr>
<tr>
<td>Sales_cap</td>
<td>Sales in current US dollars per employee. It is the ratio of oil sales to the number of employees in the company.</td>
</tr>
<tr>
<td>Roace</td>
<td>Return on investment in the company. It is defined as net income adjusted for minority interests and net financial items after tax (NOPAT), as a percentage ratio of average capital employed or the sum of shareholders’ funds and net interest-bearing debt (C).</td>
</tr>
<tr>
<td>Ebitda_ACE</td>
<td>A measurement of a company’s capital profitability. It is equal to earnings before interest, tax, depreciation and amortization (EBITDA) divided by the Average Capital Employed (ACE). Because EBITDA excludes depreciation and amortization, it can provide a cleaner view of a company’s core profitability.</td>
</tr>
<tr>
<td>RRR</td>
<td>The reserves-replacement ratio shows the covering of the company’s production with new reserves of oil. It is calculated as the ratio of the increment proven reserves to the volume of its production. A ratio of 100% means current production is sustainable, above 100% means it can grow, and below 100% means it is likely to decline.</td>
</tr>
<tr>
<td>RPR</td>
<td>Reserves-to-production ratio is the ratio of proven reserves of the company to its current production volumes.</td>
</tr>
<tr>
<td>Int_sale</td>
<td>The company’s ability to perform interest payments on loans. Defined as the ratio of interest paid on the income of the company to its sales. This indicator shows the investment attractiveness of the company from a commercial point of view, as an object that brings a certain amount of revenue per person.</td>
</tr>
<tr>
<td>Int_debt</td>
<td>The burden of debt service. It is defined as the ratio of interest payments on loans to the sum of domestic and external debt of the company.</td>
</tr>
<tr>
<td>Eff_tp</td>
<td>The efficiency of the technological process the ratio of the selling price of 1 barrel of oil produced by the company to the world price of 1 barrel of crude oil.</td>
</tr>
<tr>
<td>Price_risk</td>
<td>Price risk is the ratio of the standard deviation of the current price from its average value for the period under consideration by different companies.</td>
</tr>
<tr>
<td>Risk_roace</td>
<td>The risk of changes in return on average capital employed (ROACE) is the ratio of the standard deviation of its current value from its average value for the period under consideration.</td>
</tr>
<tr>
<td>Risk_ebitda</td>
<td>The risk of changes in return on Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) is the ratio of the standard deviation of its current value from its average value for the period under consideration.</td>
</tr>
<tr>
<td>Debt_burd</td>
<td>The burden of debt is the ratio of domestic and external debt to net income before tax and interest payments.</td>
</tr>
<tr>
<td>Tax_burd</td>
<td>The tax burden is the ratio of tax payments to the company’s net income before tax and interest payments.</td>
</tr>
</tbody>
</table>

Our panel data includes 132 observations, which enables us to build an econometric model on. Due to the short review period (from 2008 to 2013), the using of a time series proves impractical.
The expected sign of \( ebitda_{ace} \) is positive, since foreign investors desire to receive more profit from their investments in oil and gas companies.

Investors are more interested to invest in already producing companies which associated with fewer risks, so the expected sign of the change in operating expenses per 1 barrel - \( \ln(\text{opex_bar}_{oe,d}) \) is positive.

The effect of debt financing on the profitability of the company may be twofold. If the trade-off hypothesis is correct, then we can expect a positive sign for the explanatory variables \( \text{debt_burd} \) and \( \text{int_sale} \). On the contrary, the tax increase has always a negative impact on production. Therefore, we should expect a negative sign of the variable \( \text{tax_burd} \).

Indicators \( \text{output_cap} \) and \( \text{sales_cap} \) reflect net production and purely commercial productivity in oil and gas companies, and we expect a positive impact of these variables on the investment attractiveness of oil and gas companies. Expected sign of \( \text{eff_tp} \) is positive, since the higher is the level of added value, produced by companies, so greater will be their investment attractiveness. Given the specificity of oil and gas business, which assumes long term investments, the ensuring the company’s production program with sufficient oil and gas reserves is of great importance. Therefore, we expect a positive sign for \( \text{rrr} \) and \( \text{rrpr} \). In addition, we expect the negative impact of price and investment risks on the interest of investors to invest in oil and gas companies. This is a main reason of negative signs of \( \text{risk_ebitda} \) and \( \text{price_risk} \). The results of our modelling efforts are represented in the Table 6.

**Table 6. Results for Oil and Gas Companies Investments for 2008-2013 (22 major oil and gas companies)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 model</td>
</tr>
<tr>
<td>Log(\text{opex_bar}_{oe,d})</td>
<td>0.8894*** (22.6866)</td>
</tr>
<tr>
<td>Sales_cap</td>
<td>0.1365*** (5.0705)</td>
</tr>
<tr>
<td>Rrr</td>
<td>1.1815*** (2.7322)</td>
</tr>
<tr>
<td>Int_sale</td>
<td>0.8815*** (3.2050)</td>
</tr>
<tr>
<td>Ebitda_ace</td>
<td>-0.0151*** (-3.9254)</td>
</tr>
<tr>
<td>Output_cap</td>
<td>0.0116 (0.4275)</td>
</tr>
<tr>
<td>Eff_tp</td>
<td>0.0116 (0.4275)</td>
</tr>
<tr>
<td>Debt_burd</td>
<td>-8.97E-05 (-1.6193)</td>
</tr>
<tr>
<td>AR(1)</td>
<td>0.7522*** (13.0528)</td>
</tr>
<tr>
<td>C</td>
<td>-0.9160** (-2.073)</td>
</tr>
<tr>
<td>Observations</td>
<td>132</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.837</td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>0.605</td>
</tr>
<tr>
<td>F-statistic</td>
<td>169.74</td>
</tr>
</tbody>
</table>

Note: t-statistic in parentheses: ***p<0.01, **p<0.05, *p<0.1. Source: Authors’ Computations

All models, except the first, meet the basic standard statistical criteria. This is indirectly confirmed by the high coefficients of determination (90%), the F-statistic (more than 170) and the Durbin-Watson ratio are within the required standards. In addition, the high values of t-statistics in the explanatory variables in all models, except for certain variables, are talking about it.
The coefficients on $\log(\text{opex\_bar\_oe\_d})$, $\text{Sales\_cap}$, $\text{rrr}$ are positive and significant in the base model or Model 1. This model shows that the change in operating expenses per one barrel, the high level of sales per employee, sufficient oil and gas reserves are important conditions for the investment attractiveness of oil companies. A positive sign of the variable $\text{Int\_sale}$ assumes a positive relationship between a company’s ability to perform interest payments on loans and its production as it become more attractive to potential investors.

Model 2 is similar to the Model 1, except of the coefficient AR include with one lag. With its help, the serial autoregression was removed from the model, which led to a sharply increased explanatory power of the model and its sustainability. As a result, the model determination coefficient has increased from 83.5% to 92.8%, the F-statistic – from 170 to 338, and the Durbin-Watson coefficient – from 0.605 to 2.072.

In the Model 3, contrary to expectations the growth rate of $\text{Ebitda\_ace}$ did not increase the investment attractiveness of the company. Its negative sign indicates this. However, this does not really matter, since it was not statistically significant. We did the same calculations for indicators $\text{RoACE}$ and received similar results. Before us, Osmundsen and et al., [9] on the example of 14 major international oil and gas companies for the period 1990-2003 got similar results. This means that investors investing in oil and gas companies are more interested in having a stable long-term resource base than the current performance of oil companies. This is not surprising, since the prominent feature of the oil and gas business is its high risks due to the long-term nature of investments. Results of the Model 4 shows that, contrary to established beliefs, the actual growth of labor productivity in the oil and gas companies (excluding the impact of international oil prices) leads to a reduction of investments in such companies. If the company receives sufficient income, it less needs to raise funds from outside investors.

Adding variables such as technological development ($\text{eff\_tp}$) and financial leverage ($\text{debt\_burd}$) to the model has not improved it (Model 5), because of low statistical significance of these indices.

Thus, we can conclude that the current level of technical development, as well as financial indebtedness of oil and gas companies did not affect the growth of their attractiveness for investors in the period under review. This once again proves that the key criterion for investors who make decisions about investing in the oil and gas business is the availability of oil and gas reserves sufficient for long-term stable operation of the company, rather than its current financial position or economic performance. Adding to the model parameters $\text{Ebitda\_ace}$ and $\text{debt\_burd}$ instead $\text{int\_sale}$ did not improve, but rather deteriorated the model. The coefficient of determination fell from 93.6% to 92.5% (Model 5). However, both variables are not statistically significant.

5. Conclusions

After analyzing 22 large oil companies from 12 countries over the period of 10 years data from 2004 to 2013, we concluded that long-term investment decisions in oil and gas industry differ significantly from other sectors. It is due to its specific features, such as the long-term and risky nature of investments, and a large importance of raw material stocks for the securing of the feeding of production.

The list of indicators to which investors give high priority, also varies greatly. Our analysis helps to identify the most important of them. A high coefficient of determination of about 93%, obtained for the model, confirms its high explanatory power. It shows that we are correctly identified factors that explain the behavior of investors in the industry. These include the change in operating expenses per one barrel, a high level of sales per employee and sufficient oil and gas reserves, which account for 92.8% of the investment attractiveness of various oil and gas companies.

Study of the effects of $\text{Ebitda\_ace}$ or $\text{RoACE}$ on the investment attractiveness of oil companies allowed making a conclusion that investors in the oil and gas industry are more interested in the presence of a stable long-term resource base than in the current financial stability of companies. This is due to the specifics of the business in oil and gas industry, which is the long-term, and where the
company’s success depends on the availability of sufficient stock of raw materials. Therefore, in this industry, strategic investors invest mainly focusing on long-term results, rather than the short-term profitability of companies. We also found that in oil & gas industry over the period under review there is a positive relationship between companies’ ability to perform interest payments on loans and their production as they become more attractive to investors.

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Situated Sustainable Tourism: 
an Alternative for Emerging Countries

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Abstract

This article is an attempt to apply the main results of the theory of symbolic sites¹ of belonging in the field of tourism. As any new approach presupposes empirical verifications in order to consolidate its theoretical achievements, and this is exactly what this contribution in a new field such as “situated tourism” answers. This theory can be traced to the economics of development where it can be considered a “good laboratory” of studies for the failures of economic conceptions that doesn’t consider the complexity, diversity and contingencies of the development and the complex actions of economic agents.

the aim of the article or study is to decipher the motivations and needs of the agents involved in the many types of tourism such as heritage, green, rural and cultural tourism. The complexity and diverse factors that comes into play in these markets underpins the need and the use of an interdisciplinary and intercultural approach to social practices, even if they are considered economic practices. only under this condition can we highlight the “symbolic engines”, and their role in the irruption of these figures of tourism.

To accomplish this endeavor, we will start first by decrypting the new dynamics of tourism. The first step will be to isolate on the one hand the causes of the decline of mass tourism and on the other hand, the reasons for the emerging demand for new tourism models and products.

the second stage of this contribution will be to try to better specify the contributions of this situated approach to tourism. The goal of the progress of our demonstration is to widen the debate on the theory of situated tourism associating nature, culture and an economy respectful of the diversity of our world.

1. The New Dynamics of Tourism

1.1 The Decline of Mass Tourism

Trends in global tourism demand suggests that mass tourism is no longer fully in line with the changing needs of the market. Tourism demand has become more exigent, varied and variable. It tends to focus more and more on quality and expressing needs based on culture and the environment.

In concrete terms, customers are searching for sites combining the authenticity and depth of intercultural exchange on the one hand, and the harmony with nature the site historical value on the other hand.

Such demands thus seem in total contradiction with the normal offer of mass tourism which favors immediate profit and large-scale actions, thus destroying whatever touristic quality these sites may have. As Florence Deprest shows in a survey of mass tourism, that this sort of large-scale tourism has lost its appeal to both its clientele and to specialists, sociologists or economists. This phenomenon of repulsion can also be observed on the so-called elite tourism, since it does not escape the crisis of management that standardizes tourism activities.

Empirical observations clearly show that demand is increasingly turning its back on mass-tourism.

¹ The theory of symbolic sites is an approach that supports the idea of the relativity and mobility of economic phenomena. The professor behind this theory is Professor Hassan Zaoual.
The decline of the image of the seaside tourism of the “Distant Tropics” is one of those examples (the decline of the model of the 3 S: Sea, Sex and Sun), in fact negative values are increasingly associated with it, such as a cultural inactivity and a superficial contact with the host environment, nutritional risks and pollution, and above all, a new found awareness of the perverse effects of such a uniform product. Spain gives us a sad example with the “concreting” of the Costa Del Sol as well as many other sites on the planet.

A victim of its own success, “mega tourism” seems to meet the theory of the product life cycle. After the start-up phase and the expansion (years 60-70), sites that have been the subject of mass tourism are gradually losing their appeal. The offer is unable to maintain its cruising pace and is thus forced to innovate to meet the new needs.

Obviously, the degradation of tourist sites is also to be considered from the perspective of the depletion of ecosystems. The maximum load capacity of a site, a concept borrowed from global ecology, is therefore not without limit and this limit seems to express the law of decreasing returns, a law that is so very dear to Mathus and Ricardo. The model of the stationary state is also likely to be applied to the saturation of which the economic system of mass tourism is being subjected to. the quality of a touristic site is in fact based on its natural and cultural endowments, and an exploitation without limit and without respect for them will inevitably lead to their exhaustion and therefore a decrease in demand, and as a result, a further decrease in investments. The search for maximum profitability destroys the very bases of this same profitability in the long term. In his own way, Karl Marx would say: “Capital is his own gravedigger and its greatest obstacle”.

1.2 The Exhaustion of the Dominant Model:

Fundamentally, it is in diversity that the new touristic demand draws its profound motivations. In a world plagued by perpetual change, the need for belonging, as well as that of an intercultural exchange express the desire for a search for meaning from the actors involved. This is well apparent the changes that are taking place in the field of tourism. Tourists want to be actors, more responsible and engaged in their exchanges with other environments.

Similarly, local actors in touristic-developed sites seek to engage in its economy without abandoning the monopoly of the process, otherwise it will lead to the perverse effects observed in the experiences of mass tourism. (economic marginalization of the local actors, cultural destruction of their identity and exhaustion of the ecological quality of the sites concerned etc.).

The tourism industry paradoxically castrates the desire for mutual discovery which is, ironically, at the root of what motivates the in-depth behavior of the actors in this field.

As long as this intermediation is commoditized, the authenticity of the exchange relationship disappears and gives way to a factitious artificiality that demand flees progressively.

The journey becomes a “cage” and gives the impression that spatial mobility is culturally immobile to the extent that everything is organized in such a way that an encounter with the other is akin to a sham.

There is therefore no coincidence that touristic demand is now re-taking other paths and expressing itself with other needs. This reveals that economical occurrences can only be understood in their depths by being embedded in changes in values. In other words, the symbolic representations of the actors are part of their economic behaviors, one of the basic principles of this paradigm.

This requirement which alters the autonomy of the economy forces it to incorporate other dimensions has, moreover, led to a proliferation of new designs in the particular area of tourism: solidarity Tourism, Intercultural tourism, nature tourism, ecotourism, sustainable tourism, proximity tourism, memory and history tourism, value tourism. This last notion is advanced by Roger Nifle.

2 The coherence of a system of varied tourist offers implies a minimum level of partnership between all the actors concerned (populations, local authorities, civil society, professionals, etc.). The setting up of tourism network strategies is necessary. It is necessarily the joint definition of objectives (partnership), of a better understanding of the expectations of tourists, of production strategies, of promotion and of marketing.
2. Sustainable Tourism, Principles and Realities

Sustainable tourism is a touristic development that combines both the life-term and the sustainability of natural resources (water, air, soil, biological diversity) and social and human structures. The objective of sustainable development is thus to adjust and make, the improvement of the conditions and living standards that result from development, and the maintenance of the development capacities of future generations compatible.

Sustainable tourism development is part of the creation of a planning which, from the touristic point of view, aims to avoid attacks that can challenge the very foundations of development, such as:

- the Degradation of Ecosystems;
- the challenge of cultural heritage;
- the upheavals of traditions and lifestyles;
- competition for access to public facilities and infrastructure.

Under these conditions, the goal of sustainable development may be considered particularly essential for the touristic sector of all countries, and especially for the countries on the southern shore of the Mediterranean such as Morocco. This notion of sustainable tourism is directly derived from that of sustainable development. It is a form of touristic development that must be able to meet the needs of tourists while preserving all chances for future generations.

2.1 Fundamental Principles

The first general principle of sustainable development is the idea that responses to current needs should not compromise the ability of future generations to respond to their own. The Rio conference has led to the establishment of Agenda 21, which includes the fundamental principles of sustainable development:

<table>
<thead>
<tr>
<th>Environmental principles</th>
<th>Sociocultural principles</th>
<th>Economic principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respect of landscapes</td>
<td>Protection of local cultures</td>
<td>Investment control</td>
</tr>
<tr>
<td>Protection of flora and fauna</td>
<td>Integration of locals</td>
<td>Impact assessments</td>
</tr>
<tr>
<td>Qualitative water management</td>
<td>Joint management of the territory</td>
<td>Budget planning</td>
</tr>
<tr>
<td>Pollution management</td>
<td>Mastery of use.</td>
<td>Periodic checks.</td>
</tr>
</tbody>
</table>

All the main principles require a method of application, more or less defined according to a close partnership between the private sector and the public sector. For tourism companies, taking into account of all these principles is far from obvious, while for local authorities, training men or counsellors capable of guiding strategic and operational choices is entirely other problem.

2.2 What Realities?

From the tourist’s motivation to the practical realization of his dream, one must review a long chain of intermediate steps until the establishment of a touristic strategy within an emerging country like Morocco:

- the adequacy between the demand and the offer is the first reality that can make any sustainable tourism strategy precarious in the event of a mismatch.
- Accessibility is the key to any touristic policy on which a destination like Morocco cannot pass.
- The capacity to accommodate, on the level of accommodation and catering, must be able to meet both the basic needs and the purchasing power of the tourists.
- An upgrade of health and medical infrastructure in cities is increasingly essential in an era where insecurity and disease are immediately publicized.
- The quality of the animations and the entertainment facilities cannot endure for a long time poorly lived performances by the visitors.
• The commercial and information distribution networks must respond quickly and clearly to the various online or on-site requests.
• Finally, and this is not the least of the realities, the proposed price levels must generally respect the elasticity scale based on basic activities or global packages.

All these necessities are based on a professional chain both vertical and horizontal. No other activity uses such a broad and complementary set of trades.

2.3 The Stakes and the Limits of Sustainable Tourism

The relationship between tourism and the environment is ambiguous and contradictory, tourism can be analyzed, in turn, as a factor in the “degradation” of the environment and as a source of preservation.

Therefore, in our societies there is a need of nature which, at least in part, is fueled by the touristic system (reports on remarkable places and possibly “threatened” by tourism practices themselves).

Thus, for scientists, to attract the attention of public opinion to mobilize for the protection of a threatened space, it is also ultimately, to give the idea to others to imagine a new touristic product.

It is therefore a question, of mobilizing all the means capable of considering both the economic and social needs of the populations concerned, and the preservation of the areas judged to be remarkable.

Schematically, three main types of solutions exist for emerging countries: the first two are primarily technical (strongly differentiate the spaces to protect and the spaces to promote: zoning\(^3\) and regulating the attendance of sensitive spaces: quotas\(^4\)), the third is more complex and more political: it is “sustainable tourism”, which pursues the ambition of development and protection.

2.4 The Challenges of Sustainable Tourism

“Sustainable” tourism is today the indispensable formula for any argument on tourism, whether it is the political argument or the argument of scientists. It is a policy that aims to reconcile the ecological, the economic and the social. Sustainable tourism must combine the notions of duration and sustainability of natural resources (water, air, soil, biological diversity) and social and human structures. It could not be reduced to an environmental policy. The objective of sustainable development is to make compatible the improvement of the conditions and standards of living that result from the development and maintenance of the development capacities of future generations.

The issue of sustainable tourism has become essential as a result of the realization of increasing inequalities in touristic development worldwide. Thus, while international tourism around the world is growing, the gap between countries tends to increase. The nuisance of tourism is particularly important and serious on the natural environment and especially from the social and human point of view. Under these conditions, the concept of sustainable tourism is not only concerned with traditional touristic regions which must fight the deterioration of their natural environment resulting from infrastructure development projects, but also the regions of the world that were, so far, away from the expansion of the world’s major tourist trends.

In short, the sustainable development applied to tourism is what makes it possible to achieve a balance between the economic, the social and the human, as well as the use of resources.

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\(^3\) Zoning: This is the most used policy, to manage the confrontation tourism/environment. It consists of delineating spaces deemed to be remarkable so as to protect them from any intervention or, in some cases, from any attendance. The creation of natural reserves and national parks is the main manifestation of this type of policy. (Yellowstone, the world’s first national Park created in 1872 in the American West).

\(^4\) Quotas: is another way of dealing with problems that may result from tourist attendance at a sensitive site. These measures consist of regulating the flow. In some extreme cases (certain nature reserves, in particular), any attendance is prohibited. But between situations where attendance is prohibited and those where it is not limited, intermediate situations exist. From a certain threshold, they consist of stopping the flow of inputs. This type of measure implies at least two conditions: the determination of a quantitative threshold beyond which attendance is considered excessive for the preservation of the “resource” and the existence of an enclosed space with a small number of accesses. An example of a flow limitation is the National Park Ordesa (Spanish Pyrenees). See M. Stock et al., Tourism: Actors, places and Stakes, Belin, 2003, pp. 230-238.
At the economic level, sustainable tourism implies the improvement of the competitiveness of companies, this concerns directly the organizers of travel and stays, the travel agencies, the hotel and the catering industry, the companies managing the Touristic attractions. It also concerns transportation companies, the shops and the reception, information and assistance services enjoyed by tourists.

At the social level, sustainable tourism must meet the needs and meet the expectations of three categories of people: tourists, people employed in tourism and local populations residing in touristic destinations. Sustainable tourism is supposed to provide an appropriate response to all categories of potential tourists, especially young people, the elderly, people with disabilities. Another social aspiration to satisfy is the improvement of the working conditions of the people employed in the touristic sector. The third major social concern concerns the forms of tourism that do not respect the culture and the local way of life, and which do not significantly improve the well-being of the local people, neither in terms of income nor quality of life. They inevitably provoke a phenomenon of rejection. Sustainable tourism must take that into account.

At the environmental level, sustainable tourism must highlight the full potential of a territory without being too much space-consuming. In particular, it requires a rational management of water resources, pollution prevention and appropriate treatment of wastewater prior to their release into the natural environment. It implies good waste management and needs to increase energy efficiency and the use of renewable energies. As such, it must also lead to rational management of visitor flows, promote forms of transport that do not cause traffic congestion, and encourage proximity tourism.

By reconciling these economic, social and environmental concerns, tourism can make a decisive contribution to sustainable development. It can improve the situation of businesses and the well-being of people, promote responsible behavior of tourists while meeting their expectations, and facilitate the management of natural and cultural heritage.

Sustainable tourism is becoming a key objective in order to maintain a balance between “the holders of three values: economic progress, the preservation of resources and the lives of local people”, a utopia aimed at establishing a new form of governance.

2.5 The Limits of Sustainable Tourism Development

Should tourism in emerging countries be “sustainable”? Can it be? We can make the observation in a socio-economic context, where the massification of tourism and its industrialization show their limitations, but are choices in favor of different holidays, more concerned with ecological or sociocultural balances, real safe values or are they simply limited products that can add significantly additional costs? which raises a question, is this trend in favor of a more balanced and a more environmentally friendly consumption going to continue?

The first obstacle to the establishment of this sustainable tourism comes from a vision of the future very blurred for the decision-maker, who is often a public community. Sustainable tourism needs a long-term vision and it must project itself over a period of no less than twenty years and more. The question is: how do we achieve this, under the daily pressure of the short term, of rapid return on investment requirements, and even the short mandate terms for officials that usually last five to six years?

This is difficult, the reason is because to date, very little foresight work exists in the field of tourism. The public or private actor, by adopting a passive attitude towards change, will have a lot of

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3 UNESCO, as part of its global report on heritage at risk, has referenced thirty sites that are seriously threatened in the world by the misuse, even destructive, of tourism. United States, Guatemala, Argentina, Canada, Germany, Austria, France, Italy, Lebanon, Bosnia, Yugoslavia, Jordan, Turkey, Syria, Egypt, Yemen, Pakistan, India, Afghanistan, Cambodia, China, New Zealand, South Africa are all “pinned” to The abandonment of their historical heritage.

difficulties in opting for sustainable tourism. A second obstacle to the development of sustainable tourism can also be raised. Indeed, the concept of sustainable tourism has so far mainly given rise to applications in the field of tourism development policies. This is how this concept is widely applied in the context of tourism planning, especially from the regional point of view. On the other hand, its application to the tourism business sector, with the evaluation of small-scale tourism development projects usually carried out by individual private operators or in the context of small and medium-sized Enterprises, is seldom implemented. This is due to the lack of tools for applying the concept of sustainable development to micro-economic projects.

A third limit to the development of the concept of sustainable tourism concerns the risks associated with financing. In fact, the disposition for a different tourism, which can only be incentives, may change the cost of capital. Any additional costs or charges may, for example, increase the final costs for transport or accommodation. Due to the degree of exposure of sustainable tourism to competition and the risk of market value degradation, sustainable tourism in emerging countries, is not likely to be reserved for some privileged areas (natural parks...) at some “Happy-few” consumers, or to a few operators undertaking a strategy of strong differentiation.

Today, tourism projects that are part of sustainable development are still too few. Due to both socio-political burdens and the need to change the traditional problems of touristic project management. Thinking about the long term requires an effort, it is a discipline, a rule, that must be set by the decision-maker concerned with sustainable development. It is a priority choice, which poses four types of problems: the weakness of the public decision, the need for an active technological intelligence, that of the socio-economic arbitrations, and that of strategic choices for the future.

2.6 Rethinking Development: towards a True Diversity Tourism

The diversity tourism discussed here indicates the extreme relativity of the notion of resource in economics. An appropriate reconfiguration of the local potential of a site can, in fact, bring out the ignored resources. In other words, tourism or other resources are invented, and thus depend on the systems of representation of the actors of the site and the situation in which they are. And, this situation cannot be properly identified without considering the historical and cultural trajectory of the sites in question, and their readjusting in the present. It is at this level that the self-identification capabilities of the actors in a given territory come into being, Innovation begins with a “change in the Look”. The latter can only be achieved with an effort of theoretical and practical interpretation of the common sense and potential that the new common beliefs of the site can inspire and consolidate in the form of economic activities. It is only at this price that a “non-resource” becomes a resource.

At this level, all bifurcations are possible.

The exploration of the potential local innovations of the site (the P.L.I. of the site) must therefore take into account all the data of the local context (beliefs, common knowledge, diversity, historical memory etc.). What the technocrats and development economists do not do, which, often, are simply dropping projects on sites that they do not know the depths of. The failures of such procedures are commonplace both in the industrialized countries in bad restructuring and in the emerging countries notably Morocco.

As we have already pointed out, post-industrial touristic trends are a “good laboratory” for alternatives that combine the beliefs, motivations and practices of actors. In fact, through these new figures of tourism, the actors are keen to engage in an economic and social renewal that does not deny their traditions, their roots and their beliefs.

By this choice, the actors clearly demonstrate the impasse of the “disembodied economy” of old industrial capitalism, an economy based on the accumulation of capital, the consumption of material goods and the destruction of nature without limits. People today are seeking services of quality, relationships and meaning. Here, the rationality of all-out profit gives way to the relationship and to the cultural and intercultural communication.

The tourist service is one of the most relational services. The relationship is the exchange and the exchange here, above all, is of a symbolic nature before being monetary. It’s this “incalculable” aspect that is at the heart of the economic value of “new tourism services”. These characteristics suggest the importance of intercultural trust and depth in trade or non-trading.

From this point of view, the classical market paradigm is unable to read the appropriate signals to the development of quality tourism services. The most insightful economists have already demonstrated the incompleteness of market mechanisms (the economics of conventions). Here we are referring to economists who have a growing interest in the role of institutions in economic processes.

The emergence of sustainable and viable tourism based on new relationships with the culture of the sites and their natural environment is one of the signs of the industrial civilization crisis. This was built on a productivist culture and incentives for the multiplication of often artificial needs. To look at it closely, it’s the system of the market economy that needs to achieve the expected profits without which, its organization collapses.

This process is based on a psychology of lack and permanent frustration, a phenomenon well known to psychologists and marketing specialists. This process exploit, without restraint, for the needs of the system, one of the inclinations of human nature, the desire to have it.

As early as the seventeenth century, Pascal described the “natural misfortune of our condition” as follows: “There was once in man a true happiness, of which only its mark remains now and an empty trace, one which he tries unnecessarily to fill with all that surrounds him, (...) because this infinite chasm can only be filled by an infinite and immutable object”. This chasm is that of happiness by the quantity of needs created and satisfied by the civilization of mass consumption.

It is this conception of desire and happiness that is today in crisis. The relative decline of mass tourism is one aspect. The demand that is expressed through post-industrial tourism is therefore also a real reversal of the values and representations of society. The new touristic demand is an “existential demand”. It is a symptom of needs and activities whose “civilizational” content is not yet decrypted in all its depth, insofar as it is approached by the same paradigm of yesteryear, i.e. that of the economist.

Yet this “silent revolution” reflects new aspirations, the meaning of which escapes the reductionism, hence the usefulness of economic analysis to open up to other human sciences and to the plurality of human cultures. It is only with these new theoretical perspectives that the rise in power of heritage and proximity tourism can be adequately deciphered. The proximity, the depth of the cultural and intercultural exchange, the new perceptions of nature and landscapes etc. express a profound need to be situated in an anonymous world dominated by the technique and economy deenshrined and alienating.

This need for symbolic landmarks of existence is at the root of alternative tourism. At the same time, it opens the need for a new method of touristic governing that would not only enhance the touristic actors but also the tourists by involving them in an authentic exchange. From this point of view, the situated tourism organizes the intercultural exchange and ensures social and ecological sustainability.9

As we have already indicated, these new paradigmatic perspectives, that put at the center of their theoretical devices, the systems of symbolic representation of the actors, can both help us to decipher in depth the meaning of new needs and to devise the precautions to be taken as to how to satisfy them.

The economic and social demand in question reveals the exhaustion of the reign of quantity, and correlatively, the need to give meaning to its needs.

As a result, emerging markets express something deeper than a simple law of supply and demand. This one, in its evolutions, is only an apparent manifestation. In depth, this is, in fact, a change in the values and representations of the actors. It’s this change in the imagination of the actors that is at

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9 See Delphine Roussel, Tourism and local development. Experience of the meeting, doctoral thesis, ULCO, December 2006.
the heart of the new tourist dynamics. It is not possible to separate the meaning that individuals give to their outside world, the needs and economic activities that satisfy them.

In this respect, the theory of the sites teaches us that any “sane and sensible” economy, derives its vitality from the beliefs, therefore, the motivations of the actors. The economic phenomena of supply and demand as well as the social, institutional and technological conditions cannot escape the cultural and historical contingencies of the sites.

The latter are therefore a kind of markers for the economic practices in their conception, their realization and their evaluation. The variety of sites and their evolutions, thus makes the idea of a unique model, applicable at all times and in any place, a chimera.

Conclusion

In the 21st century, it no longer seems possible to consume the natural resources in an unlimited way without any major risk to Mankind. The preservation of the environment is at the center of the ecological and heritage concerns of associations or institutions as diverse as Greenpeace, WWF or UNESCO.

As part of the extension of the concept of sustainable tourism, the late Hassan Zaoual had thought of designing a new concept of “situated tourism”. This is based in its majority of a theory of symbolic sites of belonging, which is the result of the work of the South-North network Culture and development in Brussels and fundamental research of the GREL.

The situated tourism is meant to be plural. Believing strongly in the relativity and mobility of economic, social and environmental phenomena, supporting the concept of a sustainable tourism, open to the experience of local people, environmentally friendly and a generator of added value Economic.

BIBLIOGRAPHY

Education and Professional Adaptation of Young Specialists on the Labor Market

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Abstract

The real problem of modern society is the adaptation of new young specialists for rapid advancement in the profession, which is obligatory with the concrete change of the conditions and requirements for education and production, which will be impossible without a comprehensive launch and actualization of this problem in the Republic of Macedonia. The overall attention of each of us is directed towards the technology for selecting specialists, the stages of working with staff and staff, the interaction between educational institutions and production enterprises in the training, while taking into account international standards.

While under the labor market we understand socially-public and private structures for supporting employment, human resources policy in them and ensuring practical and normal functioning of the labor market, with an effective interaction between the supply and demand of our human workforce.

The new phase of development of the Macedonian society is defined and characterized by major transformation processes in all current spheres of life, and thus the future life strategies of the Macedonian academic youth.

Keywords: education, young specialists, professional work, labor market

1. Introduction

Characteristic of the present are the changes that occur in the middle of students in higher education, of which significant part are graduates.

- **Goal**
  The research efforts of the author are directed towards the consecration of social welfare and emphasizing the professional adaptation of the young Macedonian academic staff on the current labor market in Macedonia.

- **Research Method**
  To realize this contemporary problem, we will use systematic literature inspired by M. Weber We will formulate a protocol in order to define the research question (s), strategy, selection criteria, quality assessment

- **Methodology**
  The methodology is based on the principle of databases, which allows you to visualize the list of skills needed to address the adaptation of professional work, the differences between the level of specific knowledge of employees in the workplace and the required knowledge, including the updating of new jobs.

  At the moment, S.L. Rubinstein with his idea that the life of a person can continue as a spontaneous and conscious, creative directional process, and the person’s elevation factor can only be, a reasonable projection of his life, is gaining in importance and actuality in the Macedonian scientific circle.

  I am certain that there is no coincidence in the present when the life strategies of young people have always been of great interest to the Western, but also to the domestic researchers.
We can not forget the concepts of M. Webber – The theory of social action as a tool for explaining the behavior of people. E. Durkheim, in that youth life is focused on the context of creating demands from society. The theory of T. Parsons with the concept of strategic behavior, the concept of “life strategies”. A. K. Mannheim argues that young people are a group whose societal role depends on the society in which they live.

While G.A. Cherednichenko and V.N. Shubkin is advocating that life for young people is a process of gaining employment and status. Appropriate significance in the study of values and value orientations was given by A.G. Zdravomislov, B.T. Lisovsky, M.N. Rutkevich.

The problems of adapting young specialists are of an applicable nature. Defining “life strategy” still lacks logical clarity and clarity. It is interpreted either as a system of perspective representations and orientations, or as a system of goals, plans and value orientations. In reference publications, the term “strategy” is defined as “the art of planning for leadership based on correct and far-reaching predictions” [1, p. 582].

This area, with the help of scientific insights, must help specific enterprises, taking a wide range of factors and conditions related to the selection of specialists, their process of living in the work and environment, and ultimately the interaction of enterprises with educational institutions.

Initially, the problem of adapting young professionals was dependent on the activities of the head of staff, and at the first was more rigorous, based on the selection principle for selection of specialists, but also humanistic, based on specialists in diagnostics and counseling – the technological paradigm [2, p. 54].

It is possible to develop impeccable technology for the selection of specialists.

Such an instrument is implemented in the professional psychology of research (work psychology), by concentrating on the study of the details between the profession and the individual characteristics of the person. [3, p. 76]

N.A. Shlapak suggests that the life plans themselves are the actuality of the objective reality of the person, by mobilizing, organizing the property and being the ideal means for turning the possibilities into reality [4, p. 140].

The interaction of educational institutions is characterized by low efficiency in the production practice, in that they do not have touch, connection, cohesion or are not related to the place of future work of an expert.

Later, this approach is losing its efficiency with the increased intensification of production technologies, which required constant retraining of specialists, instead of their selection.

Therefore, human resource management has become a specific extension, characterized by choosing the stages in the work with the staff:

a. recruiting,
b. selection,
c. training,
d. work supervision. [5, p. 74]

At this moment, the changes that are taking place are of particular importance, so hope is preserved by the fact that young people are pragmatically directed to modern living realities and do not know the real experience of social paternalism. The risk is reflected and pointed out that young people find no recognition in raising the so-called legitimate practices, but the choice of education and profession is very much related or depends on the parents with their family financial resources or the residence itself.

Educational opportunities open up the young man and his social and cultural identity, based on his level of thinking and manner of behavior. It is important to know the opinion of the youth about their personal satisfaction with the education received and further life plans.

The comparative nature of this study defines search criteria for the effectiveness of supranational human resource work and national options for their implementation, so it guides the study of psychology at work to reorient a person working for the organization itself. [6, p. 114]
It is known that the school possesses a significant ability to influence the formation of awareness of adolescents. The priority task of each education must be to enable and realize the formation and development of each individual to:

- possesses basic knowledge,
- practical skills;
- possesses a high level of creative and analytical thinking,
- skills in a constructive search for solving personal problems;
- capable of creative self-organization.

Wider popularity began to receive organizational psychology, which is in direct contrast to the psychology of work, since it focused entirely on the problem of managing management techniques and creating the most favorable climate in the team. [7, p. 57]

Almost all young people do not doubt that in order to achieve high social and professional status, their personal vital success requires solid knowledge and therefore they want to be sure that at the end of their studies they will become well-known and educated people. In this regard, an important element is the assessment of the higher education institution.

Therefore, interaction between educational institutions and enterprises is recommended, and the preparation of manuals and training courses for those who are looking for work in the future is especially important. The very responsibility for hiring young professionals began to be seen as the responsibility for training young professionals who led the study of the psychology of labor for the reorientation of the person working for the organization itself.

In the present, the value of young specialists is determined by their new education, the awareness of new technologies, respectively, on the conscience for greater opportunities for their development.

The system thus established acquires an ever-increasing and very special importance of the integrated approach to the criteria for assessing the activities of enterprises, the typification of young professionals, the organization of interaction between the enterprise and the educational institution.

Models of organizing such an interaction are in each case in any case, but it is necessary to specify the specifics of the enterprise itself and the assessment of the higher education institution. This is all possible if the profitability indicators and the methods used to monitor market conditions are determined, as well as the ways to update the staff and many others, which would influence the concrete interaction with the educational institutions. Of course, it must be ascertained how much the enterprise and educational institution are actively involved in solving the problem with the help of beginner specialists. It is the principle that distinguishes management information from “staff” (emphasis on the enterprise) and from the management of “human resources” (emphasis on the institution).

2. Market

The market is an institution or mechanism that brings together buyers (suppliers) and sellers (supplying suppliers) of individual goods and services. Under the modern market, we understand a system that allows buyers and sellers to make free purchase and sale of goods. The structure of the market can perform in various forms. It can be a traditional market of the city square; goods, shares, currency exchange or labor exchange; newspaper ads like “sell-buy”; information and computer systems for the sale of goods, etc. There are many types of markets, whose principality can be grouped according to the following three characteristics:

- A graduate of the School of Finance talks to Chase Manhattan’s representatives at a university office and helps graduates get a job.
- Such situations, which connect potential buyers with potential sellers, form the markets. As follows from the given examples, some markets are local, while others are of national or international character. Some distinguish personal contact between the wearer and the supplier, others are impersonal – the buyer and the seller are never seen or unknown.
3. Labor Market

The labor market determines the amount of employment. Supply and demand for labor relate to the labor market. Balance on the labor market determines full employment and imbalance - either part-time employment (unemployment) or excessive employment.

The study of the labor market is necessary to determine the amount of employment. Supply and demand for labor relate to the labor market. Balance on the labor market determines full employment and imbalance – either part-time employment (unemployment) or excessive employment. This is natural, because the money was received by people from the sale of many special goods: their own workforce.

The trade of workers with labor is paying workers in a separate market – the labor market.

The labor market – the ways, social mechanisms, and organizations that allow people to find work according to their abilities and skills – and hire employees who need them to organize commercial or other activities.

This market is similar, and is not similar to other commodity markets, supply and demand laws also act here, and the uniform prices of local commodity labor force are formed. These prices are called salaries.

Salary is the amount of the Fee paid to the employee for the performance of a particular task, the amount of work or the performance of his official duties for some time.

The higher the fees that employees demand for their work, the less the employers can hire (the law of demand), the less the payout that employers are willing to pay for doing a particular job, the lower the number of people who want to engage in such work (the law of the proposal). At the intersection of these interests, the work-force balance is born-it is the salary that matches the number of people willing to engage in a certain job and the number of jobs that employers are willing to provide. On the one hand, the interests of employees and employers are contrary. Employees tend to receive as much pay as possible. Employers are directly interested in paying as much as possible and at the expense of this, to increase profits.

On the other hand, everyone needs them to the extreme. Without employees, employers simply can not organize their activities, which means they lose income. But engaged workers without employers face a threat of poverty and hunger.

The social market economy is a social structure in which the state actively supports the development of free competition, facilitates the relaxation of conflicts between employees and employers, and implements extensive programs to support socially vulnerable groups of citizens.

Functionally – the organizational structure of the labor market includes, in a developed market economy, the following elements:

- the principles of state policy in the field of employment and unemployment;
- a training system;
- Employment system, contracting system;
- Fund for support of the unemployed;
- system of retraining and retraining;
- exchange of labor; legal regulation of employment.

Manufacturers are workers who offer their own workforce (job capability), and buyers are labor collectives or individual entrepreneurs who can independently decide how many employees they need.

The Law on Supply and Demand for Labor reflects the discrepancy of vacancies on the composition of workers entering the labor market in terms of quantity and quality.

Previously existed in our country, an administrative-system command in which the state as the owner of fixed assets for production is needed for centrally planned full-time jobs, assigned and redeployed labor resources, completely destroyed the motivation for work.

International experience shows that the labor market can not exist outside a competitive economy based on private property and democratic public institutions. A totalitarian society even theoretically
excludes the possibility of such a market because it does not consider that a person is equal to the rights, legally and economically independent of the state entity. It is not so important for such a state to efficiently use the human potential and according to the personal interests of a person. It is important for him to have a person in full and unconditional submission for any needs and personal interests to meet the minimum, which excludes the economic and social independence of a person.

This provides, though ineffective, but almost complete control of the masses of people.

On the labor market, the following possibilities are realized:
- Free choice of profession, industry and place of activity, encouraged by priority proposals (salary level, opportunities for realization of creative ideas, etc.);
- employment and dismissal, while following the norms of labor legislation that protect the interests of citizens in terms of workplace safety, working conditions and payment;
- independent and at the same time economically driven by labor migration between regions, industries and the professional plan - a qualification group, usually accompanied by improved living and working conditions, by the presence of advanced, widely available high-quality the population housing market of consumer goods of cultural and spiritual values;
- free movement of wages and other income, while maintaining the priority of education and skills, compliance with the legal guaranteed minimum wage living wage, and regulation of the upper income limit through the tax system, based on a progressive scale.

Competitive-market relations reflect deep processes that are constantly occurring in society and determine its progress. Through the labor market, crossing into it, three interrelated evolutionary flows-economic development (material and technical elements and constructions), human development (general and professional culture, creative abilities, moral qualities), the development of social relations (state and class structures, property ownership, production links). They form the basis of progress in society, its main content.

Workforce is a special kind of product, productive creative qualities that fully determine the effectiveness of the competitive economy, its ability to create high quality goods and convenient services, the scope and pace of scientific, technical and organizational transformations. Therefore, the preparation and placing on the labor market of an educated and creatively active workforce, ensuring its qualification and territorial mobility, is one of the basic principles of the vital activity of the national economy. And the higher the overall level of economic development, the more complex problems need to be solved, the greater the need for a highly skilled workforce. This workforce in the developed world in the era of ST is an absolute majority of employers, and state authorities strive to create the best conditions for production and life.

Workforce – a special kind of product is also because it is in the first place, as a rule, the most interested parties in the development of their creative abilities, implemented in the national economy and the expression of the individual, especially the creative abilities of the individual.

The prevailing community of the interests of the “goods” of the labor force and its consumers – the economy and the state are the most important socioeconomic feature of the market economy that creates a solid humanistic basis for the development of the national economy and the whole society.

Undoubtedly, the organized labor market, organized and heavily controlled by the state and supported by the enterprises of the commodity economy, is constantly improving with the development of the national economy. This is one of the vital vital links in the social and economic system of each country.

The ultimate goal of the labor market is, firstly, the satisfaction of the professional-labor and vital interests of the economically active population, including social protection, and to provide the national economy with the necessary staff; secondly, to achieve full and minimal interruptions of employment, taking into account the need for a partial working week, staggering working hours, etc.

As the World Confederation stresses, “the highest form of social adaptation is a professional adaptation”. Unfortunately, we currently have only a handful of ways that help a person at an early stage to choose their business and improve in it.
5. Conclusion

In general, it can be concluded that young people are oriented towards a more successful future, which, in fact, is typical of this age category. It tends to maximize its potential for success in life.

In turn, the career prospect is the most important impetus for improving the quality of the workers themselves. In that sense, every company must have answers to a number of questions, namely:

- What vacancies can university graduates declare and what determines the prestige of the institution with which they graduated?
- Who and how to seek requirements for the professional skills, knowledge and individual characteristics of the applicant?
- How to shorten the term and improve the efficiency of the adaptation of a young specialist?
- Is it possible to create a system of individual and targeted support for the career development of already working specialists?
- Is it possible to raise the qualitative level of the personnel policy of the company because of its technological development?

The use of this and similar techniques, in our opinion, can contribute to the creation of holistic lifelong learning programs.

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Development of Road Transport Logistic Infrastructure and Air Pollution in the Visegrad Group Countries

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Abstract

Road transport is a dominant branch of transport in majority of European countries, particularly in case of freight. Its common application results from availability of transport infrastructure and lower costs compared to other branches of transport. Unfortunately, road transport poses a serious threat to the natural environment due to emission of air pollution and noise. The research has shown that modern logistic transport infrastructure may significantly decrease the pressure of transport on the environment. For this reason, the goal of this paper is to determine the level of a dynamic impact of transport infrastructure development on emission of pollution into the air, being a by-product of conventional fuels combustion in road transport in the Visegrad Group countries. The Granger causality relationship between road transport energy consumption, length of roads, number of cars and nitrogen oxides (NOx) emissions derived from road transport activity has been investigated for the Visegrad Group countries in the period of 1991-2015. Moreover, the response of the NOx emissions to changes in road transport infrastructure and energy consumption have also been examined using the impulse response functions and variance decomposition of prediction error in the framework of the vector autoregression models (VAR) methodology.

Keywords: Road transport, logistic infrastructure, air pollution, VAR, impulse response function

Introduction

Transport constitutes an important part of the logistics concept, as it directly contributes to implementation of its primary goal, which is supplying a particular product to a particular place and in specific time. The share of freight in total transport is growing, therefore freight itself as well as efficiency of logistic services in the process of shipping goods is of vital importance for economic development. Thus, numerous references can be indicated between transport and logistics, which justifies its analysis in different dimensions, including the context of natural environment protection and transport infrastructure. Noise and air pollution are the most serious problems connected with transport [22]. In the literature on the subject one can find numerous analyses connected with the impact of road transport on carbon dioxide and greenhouse gases emission [26; 19; 20; 8]. Solutions aimed at limiting the transport emission are indispensable, despite the fact that they are much more expensive than in case of other economic sectors [21]. It has been proved that development of modern infrastructure is reflected in the reduced impact of transport on the natural environment, and reduction of pollutants emission in particular. Therefore, the aim of the present paper is to determine the level of dynamic impact of transport infrastructure development on nitrogen oxides emission in the Visegrad Group countries.
Logistic Infrastructure of Road Transport and its Influence on the Natural Environment

Logistics is a dynamically developing discipline, and its primary goal is to create efficient, effective flows of all types of resources. Carrying out the processes of transportation requires being equipped with proper infrastructure. Due to the fact that the infrastructure supports implementation of logistic processes it is called logistic infrastructure. Infrastructure is the core element for countries and regions development. Both the quality as well as the quantity of infrastructure is of vital importance for economic activity and its efficiency. Logistic infrastructure is considered to be an important factor that increases region competitiveness on the international market [3]. Co-operation and regional integration are particularly facilitated by transport infrastructure [28]. This infrastructure positively influences development of connections among regions and countries, thus it supports creation of mutual economic, social and cultural relations [23; 14; 2; 10; 11; 12]. The notion of transport infrastructure is understood as a functional and service subsystem which in the reproduction process influences the activity of behaviour of the subjects of its economic system ensuring combination of their interests with the integrated development tasks and it can be considered as rather independent system with its own objectives [18]. From the perspective of Logistics transport infrastructure should ensure efficiency of flow and reduce cost of transport. Thanks to flow efficiency a product is delivered in proper time to a proper place, according to the requirements of the supplier or the recipient. Costs of transport in turn influence the efficiency of system functioning and depend on the type of the applied transport itself as well as the specific means of transport, chosen routes and time of transport. Due to this fact the logistic infrastructure of transport is understood as a complex system of elements that support physical flows, the basic goal of which is ensuring social and economic development, and also effective execution of needs of all types of logistics and transport entities and improving warehousing processes [6]. The quality of trade- and transport-related infrastructure is one of the elements of Logistics Performance Index (LPI), which is a measure applied for strategic planning [25], as transport network increases the security of social and economic life [4].

Road transport is the most frequently uses one. Unfortunately, the transport sector belongs to those sectors that are characterized by the highest growth in the scope of fuels consumption [1], which is reflected in its negative impact on the natural environment. Transport directly affects human health through emitting chemical compounds into the atmosphere [15; 9]. Means of transport are included into the group of factors that cause carbon emission [13]. However, it needs to be remembered that modern transport infrastructure decreases costs in the economy, which is reflected in a territorially sustainable development of the country and reduced negative influence of the economy on the natural environment [5]. Taking initiatives in the scope of development and improvement of transport infrastructure will contribute to reduced air pollution and improved quality of social life.

Methodology

In order to achieve the assumed goal in the scope of determining the dynamic dependence between road transport infrastructure development and emission of air pollutants the Authors applied econometric tools associated with vector autoregression model, namely: Granger causality relationship, impulse response function and variance prediction error decomposition. The tools applied make it possible not only to identify the direction of causality relationship between emission of pollutants into the air and infrastructure and energy consumption in road transport, but also allow to determine the strength of mutual relationships between these variables [24].

The VAR models are the starting point for the further study over the impact of road transport infrastructure development on air pollutant emissions [Osińska, 2006]:

\[
\begin{bmatrix}
\Delta \ln(P)_t \\
\Delta \ln(E)_t \\
\Delta \ln(I)_t
\end{bmatrix}
= \begin{bmatrix}
\alpha_{10} + \alpha_{11}t \\
\alpha_{20} + \alpha_{21}t \\
\alpha_{30} + \alpha_{31}t
\end{bmatrix}
+ \sum_{k=1}^{p} \begin{bmatrix}
\theta_{11,k} & \theta_{12,k} & \theta_{13,k} \\
\theta_{21,k} & \theta_{22,k} & \theta_{23,k} \\
\theta_{31,k} & \theta_{32,k} & \theta_{33,k}
\end{bmatrix}
\begin{bmatrix}
\Delta \ln(P)_{t-k} \\
\Delta \ln(E)_{t-k} \\
\Delta \ln(I)_{t-k}
\end{bmatrix}
+ \begin{bmatrix}
\varepsilon_{1,t} \\
\varepsilon_{2,t} \\
\varepsilon_{3,t}
\end{bmatrix},
\] (1)
or

\[ Y_t = A_0 D_t + \sum_{k=1}^{p} \Theta_k Y_{t-k} + \varepsilon_t, \]

(2)

where: \( Y_t = [\Delta \ln(P), \Delta \ln(E), \Delta \ln(I)]^T \) – vector of current values observation of endogenous variables: percentage log return of air pollutant emissions by road transport, percentage log return of road transport energy use, percentage log return of road transport infrastructure indicator, \( p \) is the optimal log length chosen on the basis of the information criteria set (Akaike criterion-AIC, Schwarz Bayesian criterion - BIC, Hannan-Quinn criterion-HQC), \( D_t = [1, t]^T \) – vector of deterministic variables (constant or linear trend), \( A_0 = [\alpha_{ij}] \ (i=1, 2, 3 \text{ and } j=0,1) \) – matrix of parameters corresponding to deterministic variables, \( \Theta_k = [\theta_{ij,k}] \ (i, j=1, 2, 3 \text{ and } k=1,2,..,p) \) – matrices of parameters corresponding to vectors of lagged endogenous variables, \( \theta_{ij,k} \) are the short-run adjustment parameters, \( \varepsilon_t = [\varepsilon_{t1}, \varepsilon_{t2}, \varepsilon_{t3}]^T \) – vector of error terms presumed to be uncorrelated with mean zero and finite covariance matrix, \( t = 1,2,\ldots, T \).

The traditional Wald tests for the joint significance of all estimates of the short-run adjustment parameters included in the structure of a multidimensional system, that is transport infrastructure development or energy consumption in road transport. Making use of the representation of the moving average for the VAR model in the reduced form, endogenous variables of the analysed system can be described by means of the Impulse Response Function and variance decomposition of prediction errors [16]:

\[ BY_t = \Gamma_0 D_t + \sum_{k=1}^{p} \Gamma_k Y_{t-k} + \zeta_t, \]

(3)

for

\[ A_0 = B^{-1} \Gamma_0, \ \Theta_k = B^{-1} \Gamma_k, \ \varepsilon_t = B^{-1} \zeta_t, \]

(4)

if \( B \) is non-singular matrix.

Impulse Response Function allows to show the strength of the reaction force of the variable that describes emission of pollutants into the air in road transport per unit change of other variables included in the structure of a multidimensional system, that is transport infrastructure development or energy consumption in road transport. Making use of the representation of the moving average for the VAR model in the reduced form, endogenous variables of the analysed system can be described by means of random components of the structural model [16]:

\[ Y_t = \mu + \sum_{s=0}^{\infty} \Theta_s \varepsilon_{t-s} = \mu + \sum_{s=0}^{\infty} \Theta_s B^{-1} \zeta_{t-s} = \mu + \sum_{s=0}^{\infty} \Phi_s \zeta_{t-s}, \]

(5)

where the element \( \varphi_{ij}(s) \ (i,j=1, 2, 3 \text{ and } s=1,2,\ldots) \) of matrix \( \Phi \) describes the response of \( i \)-th variable in the system at the moment \( t \) to a unit disorder of random component \( j \)-th variable in the system from the period \( t-s \), at lack of analogous disorders of random components of the remaining variables. This is an interpretation of the impulse response function for the delay \( s \).

The equation (5) makes it possible to forecast future states of the system:

\[ Y_{t+h} = \mu + \sum_{s=0}^{\infty} \Phi_s \zeta_{t+h-s}, \]

(6)

with the prediction error defined by the following relation:

\[ Y_{t+h} - \hat{E}_t(Y_{t+h}) = \sum_{s=0}^{\infty} \Phi_s \zeta_{t+h-s}. \]

(7)

Prediction error variance for \( i \)-th system variable for \( h \) future periods can be assessed on the basis of the following formula [27]:

\[ \sigma^2_i(h) = \sum_{j=1}^{3} \sigma^2_j \cdot \sum_{s=0}^{n-1} (\varphi_{ij}(s))^2, \]

(8)

while decomposition of the prediction error variance can be conducted (8), so as to determine the shares of disorders attributed to particular equations of the VAR model in this variance:

\[ w_j = \frac{\sigma^2_j \sum_{s=0}^{n-1} (\varphi_{ij}(s))^2}{\sigma^2_i(h)} \cdot 100\%, \]

(9)

where \( w_i \) – percentage share of \( \zeta_{it} \) disorder in the forecast variance for \( i \)-th variable.

1 Dla uproszczenia przyjęto założenie, że wektor zmiennych deterministycznych zawiera tylko stałą \( \mu \), a \( p=1 \).
Data and Empirical Results

The following variables have been subject to analysis:
- final energy consumption in road transport in kilogram of oil equivalent per capita,
- total length of road (the sum of length of motorways, length of e-roads and length of other roads) in kilometre per capita,
- total number of passenger cars, motor coaches, buses and trolley buses, lorries, road tractors per capita,
- nitrogen oxides emission by road transport in kilograms per capita.

The analysis has been conducted for data observed in the years 1991-2015. The selection of the period to be analysed was the result of the availability and completeness of data in Eurostat database.

The analyses have been conducted for the Visegrad Group due to similar conditionings of economic development and taking joint initiatives. In case of road transport emission of pollutants is mainly connected with the process of fuels combustion, thus energy consumption. The pace of economic growth depends, inter alia, on the length of various types of roads, the network of which allows to distribute properly the intensity of traffic. The variables that determine the air pollution level include nitrogen oxides as it is thought to be the leading pollutant from transport, which contributes to acidification, formation of ground level ozone and particulate formation.

The ADF-GLS test is used to determine the order of integration of time series data, which refers to road transport energy consumption per capita, length of road per capita, number of cars per capita and per capita nitrogen oxides emission by road transport. This test verifies the presence of unit roots in demeaned or detrended time series in accordance with the GLS procedure suggested by Elliott, Rothenberg and Stock [7]. The maximum lag order for the ADF equation is set on the basis of the optimization of the modified Schwarz Bayesian information criterion (MBIC), which is computed according to the revised method recommended by Perron and Qu [17].

<table>
<thead>
<tr>
<th>Country</th>
<th>NOx emissions</th>
<th>Energy use</th>
<th>Number of cars</th>
<th>Length of roads</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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</tr>
<tr>
<td>Czech Republic</td>
<td>-1,8982 (0)</td>
<td>-0,7445 (0)</td>
<td>-2,1703 (0)</td>
<td>-1,0751 (0)</td>
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<td>c+t</td>
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<td>-2,3675 (0)</td>
<td>-1,2369 (0)</td>
<td>-1,6594 (0)</td>
<td>-1,9555 (0)</td>
</tr>
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<td>-2,2552 (0)</td>
</tr>
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<td></td>
<td>c+t</td>
<td>c+t</td>
<td>c+t</td>
<td>c+t</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2,8369 (0)</td>
<td>-1,5703 (2)</td>
<td>-1,1343 (0)</td>
<td>-2,0474 (0)</td>
</tr>
<tr>
<td></td>
<td>c+t</td>
<td>c+t</td>
<td>c+t</td>
<td>c+t</td>
</tr>
<tr>
<td>First differences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>-2,3125** (0)</td>
<td>-1,8414†† (1)</td>
<td>-2,8082*** (0)</td>
<td>-4,6604*** (0)</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c+t</td>
</tr>
<tr>
<td>Hungary</td>
<td>-2,1404** (0)</td>
<td>-2,6643*** (0)</td>
<td>-3,9677*** (0)</td>
<td>-4,9230*** (0)</td>
</tr>
<tr>
<td></td>
<td>c+t</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>Poland</td>
<td>-2,7939*** (0)</td>
<td>-3,3262*** (0)</td>
<td>-2,5279*** (1)</td>
<td>-5,0801*** (0)</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
<tr>
<td>Slovakia</td>
<td>-1,6231† (2)</td>
<td>-7,1417*** (0)</td>
<td>-3,0092*** (1)</td>
<td>-2,0474*** (0)</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>c</td>
<td>c</td>
<td>c</td>
</tr>
</tbody>
</table>

Note: all variables in natural logs, lag length determined via MBIC in parentheses, ADF regression specification in deterministic part: c – constant, c+t – constant and linear trend. *, **, *** denote statistical significance respectively at the 10%, 5%, 1% level.

The results of the ADF-GLS unit root tests presented in Table 1 indicate at the non-stationarity of all variables and stationarity of their first differences, so one may conclude that each variable is integrated of order one (I(1)). Having determined the integration order for all variables (d=1), it is
possible to evaluate several lag length criteria to select the optimal lag order \( p \) in the vector autoregressive model. Hence, VAR(\( p \)) models (1)-(2) for first differences of analysed variables are estimated and basic diagnostic tests are carried out. The correlogram of residuals and squared residuals allows to exclude the existence of serial correlation effect, what is also confirmed by the results of Lagrange multiplier tests. Results of the Doornik-Hansen test allow for the rejection of the null hypothesis about the normality of residuals at significance level 0.01 only for the second analysed system in the case of Hungary and Slovakia. The VAR models for both sets of variables are stable with all roots within the unit circle.

Therefore, above mentioned results allow to conduct the Wald test for Granger causality for two systems: the first system includes nitrogen oxides indicator, energy consumption indicator and transport infrastructure indicator describing the cars’ number per capita, while in the second system per capita length of roads plays the role of the transport infrastructure indicator (see Table 2).

**Table 2.** The results of the Wald test for the Granger causality – the Visegrad Group countries

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Sources of causation (independent variables)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First system: NOx emissions, energy use, number of cars</td>
<td>Second system: NOx emissions, energy use, length of roads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{NO}_x )</td>
<td>-</td>
<td>1,4797 ([0,261])</td>
<td>5,3706** ([0,019])</td>
<td>-</td>
<td>1,2054 ([0,286])</td>
<td>10,225*** ([0,005])</td>
</tr>
<tr>
<td>( \Delta \ln \text{E} )</td>
<td>8,9587**** ([0,003])</td>
<td>-</td>
<td>6,0196** ([0,013])</td>
<td>2,9089 -</td>
<td>- 0,0610 ([0,080])</td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{I} )</td>
<td>7,9875**** ([0,005])</td>
<td>3,7291** ([0,049])</td>
<td>-</td>
<td>1,3665 0,8769</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Hungary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{NO}_x )</td>
<td>-</td>
<td>3,5623* ([0,075])</td>
<td>5,9459** ([0,025])</td>
<td>-</td>
<td>2,2166 ([0,153])</td>
<td>0,0874 ([0,771])</td>
</tr>
<tr>
<td>( \Delta \ln \text{E} )</td>
<td>3,5658* ([0,074])</td>
<td>-</td>
<td>4,9124* ([0,039])</td>
<td>1,8272 -</td>
<td>- 0,7224 ([0,406])</td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{I} )</td>
<td>0,2757 ([0,066])</td>
<td>0,0015 ([0,962])</td>
<td>-</td>
<td>0,9853 1,2149</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{NO}_x )</td>
<td>-</td>
<td>9,347**** ([0,002])</td>
<td>0,9841 ([0,397])</td>
<td>-</td>
<td>2,2836 ([0,147])</td>
<td>2,1051 ([0,163])</td>
</tr>
<tr>
<td>( \Delta \ln \text{E} )</td>
<td>6,457**** ([0,009])</td>
<td>-</td>
<td>0,3435 ([0,715])</td>
<td>7,2732** ([0,014])</td>
<td>- 1,4949 ([0,236])</td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{I} )</td>
<td>22,124**** ([0,000])</td>
<td>27,431**** ([0,000])</td>
<td>-</td>
<td>1,7112 2,8868</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Slovakia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{NO}_x )</td>
<td>-</td>
<td>4,4477**** ([0,048])</td>
<td>24,336** ([0,000])</td>
<td>-</td>
<td>5,6738** ([0,028])</td>
<td>0,0816 ([0,778])</td>
</tr>
<tr>
<td>( \Delta \ln \text{E} )</td>
<td>5,3145** ([0,032])</td>
<td>-</td>
<td>3,3125* ([0,085])</td>
<td>5,8291** ([0,026])</td>
<td>- 0,0973 ([0,759])</td>
<td></td>
</tr>
<tr>
<td>( \Delta \ln \text{I} )</td>
<td>0,0386 ([0,846])</td>
<td>1,9128 ([0,183])</td>
<td>-</td>
<td>1,2412 1,0683</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

*Note:* *, **, *** denote statistical significance respectively at the 10%, 5%, 1% level. Significance implies that independent variable Granger causes the dependent variable. I mean road transport infrastructure indicator: number of cars per capita (first system) or length of roads per capita (second system).

While analysing the results presented in Table 2 one can notice that significant short-term causality relationships have been identified among the variables being elements of the first system, in the second system in turn relationships of this kind between endogenous variables occurred rarely. In the second system, the results of Wald test provide evidence for existence of unidirectional Granger causality running from the roads’ length to nitrogen oxides emissions in the Czech Republic and also

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2 Results of diagnostics tests for VAR models are available from the authors upon request.
unidirectional Granger causality running from the air pollutant emissions to energy consumption in Poland. The bidirectional Granger causality exists between road transport energy consumption and nitrogen oxides emissions in Slovakia, whilst there is no causality (in any direction) between endogenous variables in the second system for Hungary. Therefore, it is difficult to present the common causality pattern between road transport energy use, nitrogen oxides emissions and length of roads in the Visegrad Group countries.

In case of the first system one can indicate the occurrence of bi-directional Granger causality relationship between energy consumption in road transport and nitrogen oxides for Hungary, Poland and Slovakia. Thus, it can be assumed that in these countries the growth of conventional fuels consumption contributes to increased emission of pollutants into the atmosphere, in particular such harmful compounds as nitrogen oxides. On the other hand, the EU transport policy aims at tightening the fuel purity standards, development of bio-fuels market and electrical vehicles may contribute to replacing old car models with new ones, and what follows decreasing the energy consumption while performing transport services. One can interpret in an equivalent way the occurrence of a one-directional causality relationship from nitrogen oxides emission in road transport to energy consumption for the Czech Republic. Occurrences of short-term feedbacks between the number of cars and nitrogen oxides emission and the number of cars and energy consumption for the Czech Republic have also been identified. For Slovakia and Hungary in turn, the number of cars is the Granger cause for energy consumption in road transport as well as for air pollutants emission.

Occurrences of causality relationships of the same direction between the analysed in the system first variables of the Visegrad Group countries may constitute an important piece of information for the decision-makers while formulating goals of transport policy and also while developing the plans of road transport infrastructure development.

In turn, examining the influence of innovations assigned to particular variables in the system on nitrogen oxides emissions may provide useful information about the short-run changes in air pollutant emissions caused by unexpected changes in road transport energy use and development of road transport infrastructure. Impulse responses, which are presented in Figures 1-4 for the Visegrad Group countries, show how nitrogen oxides emission responds to a shock in energy use or transport infrastructure initially and whether the effect of the shock is persistent or temporary.

Fig. 1. Impulse responses of $\Delta NO_x$ to one standard deviation innovations in $\Delta E$ and $\Delta I$ for the Czech Republic: first specification – upper panel, second specification – lower panel
Fig. 2. Impulse responses of $\Delta \text{NO}_x$ to one standard deviation innovations in $\Delta E$ and $\Delta I$ for Hungary: first specification – upper panel, second specification – lower panel

Fig. 3. Impulse responses of $\Delta \text{NO}_x$ to one standard deviation innovations in $\Delta E$ and $\Delta I$ for Poland: first specification – upper panel, second specification – lower panel
The reaction of NO\textsubscript{x} emission growth in road transport to the impulse of the size of one standard deviation from energy consumption growth is strong and lasts for 3-4 further years for all the Visegrad Group countries. However, after that time it is strongly suppressed for the Czech Republic and Slovakia. In case of Poland and Hungary the reaction of nitrogen oxides emission growth to the same impulse lasts longer and is suppressed more slowly. This constitutes a confirmation for the identified Granger causality relationship between energy consumption and NO\textsubscript{x} emission for the Czech Republic, Hungary and Slovakia. The reaction of nitrogen oxides emission growth to the impulse from the car number growth side is definitely weaker and suppressed quickly for the Czech Republic, Hungary and Slovakia. The reaction of nitrogen oxides emission growth to the impulse from the road length growth side is the strongest for Hungary and Slovakia, but after 3 years this impulse is already much suppressed, and after 10 years it is practically invisible. For the Czech Republic and Poland, the reaction of NO\textsubscript{x} emission growth to the impulse triggered by the road length growth is weaker. It is worth stressing here that a quick reaction to the impulses occurring in the system and their quick suppression confirm the stability of the system. Thus, the reaction of NO\textsubscript{x} emission growth to the impulse from the energy consumption growth side in the first system indicates rather its instability in case of Poland and Hungary. Strong responses of nitrogen oxides emission to the impulse from the side of energy consumption and number of cars may indicate a high level of dependence between these variables in the Visegrad Group countries.

In turn, the variance decomposition of prediction error indicates which part of nitrogen oxides emission volatility may be explained by the variability of road transport energy consumption or changes in road transport infrastructure. The variance decomposition of prediction error for air pollutant emission indicator has been summarized in table 3.
The results of prediction error variance decomposition for nitrogen oxides emission growths confirm the results of Granger causality relationship and impulse response function. The prediction error of NO\(_x\) emission growths to the largest extent depends on their delayed values for all the countries of the Visegrad Group. The share of energy consumption growths in the prediction error of nitrogen oxides emission growths varies from 1.59% in case of Poland to 12.32% in case of Slovakia in a one-year forecast horizon. The share of the car number growths in the prediction error of nitrogen oxides emiss\(\text{i}\)on growths varies from 0.26% in case of Poland and to 12.24% in case of Slovakia in a one-year forecast horizon. As the forecast horizon lengthens the share of car number growths significantly increases in the prediction error of nitrogen oxides emission growths for the Czech Republic, Hungary and Slovakia. In turn, the share of length of roads growth in the prediction error of nitrogen oxides emission growths is the largest for the Czech Republic and Poland, as in a one-year horizon it amounts respectively 14.58% and 8.48%. The values of prognosis error decomposition of nitrogen oxides emission growths confirm the earlier observations with regard to occurrence of significant relationships among the analysed variables in the first system.

It would be worth to deepen the conducted analysis through considering additional control variables in the analysis, for example the age of cars or engine type, and also the share of bio-fuels in energy consumption. Moreover, it would be useful to make use econometric tools that enable to identify non-linear relationships between the analyses endogenous variables. Unfortunately, the length of time series available for the Visegrad Group made it impossible to conduct analyses of this kind at this stage.

### Conclusions

Due to the negative impact of transport processes on the natural environment, in the first place those means of transport should be promoted that are environmentally-friendly. The dominant road transport should be then replaced by rail and water transport. Unfortunately, in the majority of European countries, including the Visegrad Group ones, the share of road transport is growing or remains at the same level in the years to come in case of freight, which has a particularly negative
influence on the environment and road safety. Thus, the priority of sustainable transport strategy should be bridging the demand asymmetry directed at road transport. However, another solution may be making investments in modern logistic transport infrastructure, which thanks to optimum management of traffic intensity reduces the negative influence on the natural environment, mainly through air pollution reduction. Air pollution constitutes the most important problem of road transport functioning.

The research conducted has demonstrated that the emission of nitrogen oxides is to the largest extent affected by the amount of consumed energy and number of cars. However, this impact may be treated as a derivative of transport infrastructure development measured with the length of roads.

While analysing the dynamics of changes in the scope of the length of motorways in the Visegrad Group countries one can observe a slight average annual growth in this respect in the years 1991-2015, the largest in Hungary and Poland (respectively by 8,13% and 8,45%), while it was mainly caused by the growth in the motorways length after these countries accessed the European Union in 2004. Lack of modern infrastructure is reflected in an uneven distribution of traffic intensity, traffic jams, which cause air pollutants emission growth, in this nitrogen oxides. Investments into the road infrastructure, its modernisation, and first of all an increase in the motorway’s length are some of the ways to limit the negative impact of road transport on the natural environment.

REFERENCES

Spatial Effects of Innovation Variety and Trade Openness on Innovation Outputs

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Abstract

The paper analyzes the spatial effects of innovation variety and trade openness on innovation performance using a data set for 30 European countries during 2007-2017. The estimations illustrate the presence of spatial dependencies that affect the mechanisms of knowledge distribution and the magnitude of the effects of the various determinants of innovation. Considering spatial dependence, diversified agglomerations (urbanization economies) can induce important inferences to improve the innovation outputs. So, related innovation activities based on technology fields are a real, constant and significant support for better innovation outcomes. A key role can likewise play the R&D expenditures within the business sector. A high share of engineers and scientists in science and technology also contribute to innovation enhancement, but the general level of tertiary educated labor force do not have a uniform positive effect, contrary to expectations. Regarding the spatial effects, the results are relevant especially concerning the direct effects and less through indirect (spillovers) effects. Including more open services imports can induce a some positive direct influence on the international patent applications. In the empirical assessments, we used spatial econometric procedures that take into account the spatial dependencies, as weights matrices and specific tests prove.

Keywords: patent applications, unrelated and related variety, direct and spillovers effects, export and import openness, diversification and concentration

1. Introduction

The knowledge economy receives a special importance not only through the dynamic innovation activity in all countries, but also by the special interest in understanding the determinants and mechanisms in innovative process as well as its impact on the development of societies and people wellbeing. This is highlighted in the theoretical literature on the innovation drivers or its impact on macroeconomic aggregates. Many empirical studies, on different territorial areas and periods, using approaches, models, and various methods have contributed to the development of knowledge, with evident statements views on the cause-effect relationship between innovation and the other economic activities. Innovation has become an essential link in increasing productivity, output of production process, or better insertion into the labor market and the quality of life.

2. Literature review

A very large literature underlines the impact of activities agglomeration on macro or micro results. Griliches [1], Pakes and Griliches [2], Jaffe [3] or Hall, Griliches and Hausman [4] are among the first authors who, based on a knowledge production function, analyzed patenting activity in relation to company performance. They have highlighted that the level of knowledge of an individual, firm, society is not only the result of one’s own effort but also of external knowledge through effects related
to the accumulated experience of other actors, without thereby diminishing the value of transferred knowledge.

Analyzing the relationship between the public research benefits and the location of different firms, Jaffe [3] integrates a geographical correlation index between company and university locations into the knowledge production function, as well as an inter-firm correlation index. He considers that, given the evidence of a high geographic correlation, it can be assumed that supporting local research activities (universities, research centers) has external effects on innovation activity in other firms. Thus, the results of knowledge activity (such as patents) increase with R & D expenditure of firms and universities research centers. In parallel, it becomes obvious that large firms tend to internalize the knowledge they have acquired in their research centers, and small firms exploit the earnings from university research centers.

Innovative developers, through collaborative systems and networks, transfer information from one domain to another and where they can be applied, linking innovative clusters and firms and making possible knowledge and technology recombinations, and thus lead to new innovations [5], [6]. As a result, effective knowledge dissemination may occur, given a geographical proximity, influenced by labor mobility or direct contact possibilities. Feldman and Kogler [7] argue that the geographic dimension of innovation activity produces effects in terms of promoting economic growth as well as technological change and physical proximity is of particular importance in understanding the dynamics of innovation.

We find in literature more and more approaches to macroeconomic processes, in which a special place is due to the experience and skills acquired by individuals or various entities. Over time, a number of elements of the evolutionary economy and other areas of science have been integrated into the models of the new economic geography. A central principle of evolutionary theory is diversity [8], which could mean the quantification of regional technological knowledge, by combining existing and new knowledge, actually contributing to the generation of others (Schumpeter’s innovation idea, by recombining previous ideas). When a region has a variety of related technologies, connections are more efficiently established, making these technologies easier to recombine. At the same time, when knowledge comes from technologies that are very different from each other (reflected by the unrelated variety), regional actors may encounter difficulties in integrating them and benefiting from spillovers, respectively, developing interactions leading to new ideas, and improving innovation outcomes.

One of the first approaches to the differentiation of the sectors variety belongs to Frenken, Van Oort and Verburg [9], who have shown that the related variety contributes to regional economic growth in the Netherlands. The study validated the relevance of the diversity of regional knowledge stocks to the outcome of regional innovation, employment or productivity [10], [11], [12]. Instead, Bishop and Gripaios [13] find that unrelated variety affects more employment growth in British industries than related varieties.

Tavassoli and Carbonara [14] or Castaldi, Frenken and Los [15] analyzed the role of the unrelated and related variety on innovation output in Sweden and the USA. Their findings suggest that in case of knowledge variety within American states, unrelated variety does not affect production of regional innovation in general, while the impact is robust and positive in terms of related variety. However, Castaldi, Frenken and Los [15] show that a high degree of unrelated variety increases technological progress – i.e., innovation with a high technological and economic impact.

Starting from a knowledge production function, Miguélez and Moreno [16] investigate the effects of the distribution of innovation activity on innovation performance in 261 European regions. They use entropy indicators as unrelated and related varieties, based on the Frenken, Van Oort, and Verburg model [9], but based on patents applications, and not on the most commonly used measure of employment. Miguélez and Moreno [16] estimate a positive relationship between the variety of knowledge stocks at regional level and the output of innovation, as well as employment and productivity.
We also find in more recent literature studies on the link between trade policy, international trade and innovation. Analysing the effects of tariff cuts and company patenting activity on a sample of 60 and 100 countries, Coelli, Moxnes and Ulltveit-Moe [17] estimate significant effects of promoting innovation and growth. Based on the new theory of growth and firm heterogeneity, Aghion, Bergeaud, Lequien and Melitz [18] establish a strengthened patenting activity in direct relation with exports of firms with high productivity (using data for French firms between 1994 and 2012).

3. Methodology

Assessing the role of diversification of exports/imports, trade opening and variety in innovation, we estimated a knowledge production function on a sample of 30 European countries (between 2007-2017), aiming to highlight the connections between the results of the innovation activities and some diversified agglomerations economies. Spatial dimensions were taken into account by a series of econometric models that use as a tool the weighted distance matrices.

Spatial estimation methods are diverse, connecting spatial correlation to the dependent variable, independent variables, or error patterns. Based on diagnostic tests, considering the lowest value of the Akaike Information Criterion and Schwarz Criterion, and the highest probability of the log-likelihood function, as a prime choice, we could appreciate the Durbin spatial model (SDM) as the most appropriate fit in achieving consistent results. This is a special model involving consideration of the lagged endogenous variable, explanatory variables, and all of the exogenous regressors (WX).

Thus, the dependent variable, Y, will depend on the characteristics of its own region (matrix vector X) and the same variables of neighboring regions.

The linear logarithm specification of the basic parametric model (SDM type) with spatially lagged dependent variable has the form (spatial autocorrelation effect, $\lambda=0$):

$$Y_{it} = \rho W Y_{it} + \beta X_{it} + \theta X_{it} WX + \varepsilon,$$

where:

- $Y_{it}$ indicates the number of European patent applications per field of technology and per country of residence of the applicants or the intensity of innovation, expressed by reporting patent applications to the number of inhabitants;
- $W_{it}$ is the inverse matrix of distances for country $i$ in year $t$;
- $X_{it}$ is the set of potential determinants of innovation ($\beta$ and $\theta$ are their elasticities) considering, as the main inputs, R & D expenditures (total – gerd, or in the business area – berd), labor market indicators (share of scientists and engineers, 25-74 years, employed in scientific and technological activities), to which we added measurement variables for the size of the economies (gdp per capita in pps), demographic characteristics (population density) as well as indicators like concentration and diversification exports and imports, and also the international trade openness.

At the same time, at this stage of analysis, we could include as variables of interest not only the total number of patents filed, but also measures of the unrelated (uv_patents) and related (rv_patents), built on the basis of European patent applications by 35 fields of technology (based on WIPO IPC technology concordance, associated with the CAEN economic sections, divisions, groups). The indicators have been calculated using Frenken, van Oort and Verburg [9] formula. The sources of the data are EPO for the patent applications [19] and Eurostat [20].

The cartographic distribution of European patent applications and un/related variety calculated on the basis of technology fields is also eloquent (EPO data for 2017).
Clustering with low levels of innovation intensity are represented by countries such as Romania and Bulgaria (modest innovators), in the moderate category being 14 old and new member states [21], the rest being the strong and the top innovators.

4. Results and Effects

4.1. Exploratory Data Analysis

The first step was the exploratory data analysis, i.e., spatial autocorrelation on a panel of 30 European states (European Union, Norway and Switzerland) over a 11-year time span (2007-2017).

Spatial autocorrelation can be examined using statistical significance tests on which the spatial dependence structure is established, and then it is incorporated into spatial econometric models. Once the inverse matrix of distances was established, we used the I’ Moran (and c Geary) statistical tests to detect spatial autocorrelation of the variables according to Table 1.

<table>
<thead>
<tr>
<th>Variables</th>
<th>I</th>
<th>E(I)</th>
<th>sd(I)</th>
<th>Z</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
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<td>log patent applications</td>
<td>0.373</td>
<td>-0.034</td>
<td>0.082</td>
<td>4.994</td>
<td>0.000</td>
</tr>
<tr>
<td>log gdp per cap pps</td>
<td>0.424</td>
<td>-0.034</td>
<td>0.079</td>
<td>5.771</td>
<td>0.000</td>
</tr>
<tr>
<td>log urban population</td>
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<td>-0.034</td>
<td>0.081</td>
<td>4.843</td>
<td>0.000</td>
</tr>
<tr>
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<td>-0.034</td>
<td>0.045</td>
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</tr>
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<td>-0.034</td>
<td>0.079</td>
<td>4.276</td>
<td>0.000</td>
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<tr>
<td>log export openness goods</td>
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<td>0.081</td>
<td>1.873</td>
<td>0.031</td>
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<td>log import openness goods</td>
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<td>-0.034</td>
<td>0.081</td>
<td>2.184</td>
<td>0.014</td>
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<tr>
<td>log scientists engineers pop 74</td>
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<td>-0.034</td>
<td>0.081</td>
<td>6.225</td>
<td>0.000</td>
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<tr>
<td>log gerd gdp</td>
<td>0.232</td>
<td>-0.034</td>
<td>0.081</td>
<td>3.287</td>
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</tr>
</tbody>
</table>

*** Weights matrix. Type: Distance-based (binary). Row-standardized: Yes
Source: own elaboration in Stata

The index has values ranging from -1 (indicating perfect dispersion) and 1 (perfect correlation) also being able to have higher values. A null value means that the spatial distribution of the considered variable is perfectly random in the space. Positive values of the index indicate positive spatial autocorrelation, implying that the values of each observation (countries) resemble those of the neighbors. A negative index involves negative autocorrelation; neighbor’s values (for a specific variable) are raised when the observation (the country in our case) is low and if it is high, its neighbors have low values.

The data on patent applications show a very large variation in country distribution, but I Moran's average of 0.373 indicates a certain concentration of high/low values.
4.2 Main results (elasticities)

The presence of a process of spatial dependence by relating similar values in neighboring areas and the persistence of the process throughout the period allows for a more detailed analysis of the innovation determinants. Detecting spatial autocorrelation may be real and due to the spreading of the variable structure, or it may be apparent due to the existence of other variables that can explain the spatial dependence. The estimated results are illustrated in Table 1 (Spatial Durbin Model models).

| Table 2. Estimation of spatial autoregressive parameters of innovation determinants |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                  | Model 1          | Model 2          | Model 3          | Model 4          | Model 5          | Model 6          |
| log_gdp_per_capita_pps | 0.879***         | 1.070***         |                  |                  |                  |                  |
| log_gross_fixed_capital_formation (fbkf) | -0.182           | -0.453**         | -0.0644          | -0.0949          | -0.122           |                  |
| log_business_expenditure_R&D (berd) | 0.172**          | 0.161*           |                  | 0.163*           | 0.152*           |                  |
| log_scientists_engineers_15_74 |                  | 0.522***         |                  | 0.492***         | 0.468***         |                  |
| log_population_density |                  |                  |                  |                  |                  | 0.544           |
| log_inward_FDI_stock_% |                  |                  |                  |                  |                  | -0.134*         |
| log_import_openness_services | 0.145            | 0.0456           | 0.0940           | 0.0127           | 0.136            | 0.194           |
| log_import_openness_goods | -0.662***        | -0.165           | -0.586***        | -0.508**         | -0.691***        | -0.674***        |
| log_export_concentration_index | -0.0649          | -0.00510         |                  |                  |                  |                  |
| log_import_concentration_index | 0.110            | 0.121            |                  |                  |                  |                  |
| log_export_diversification_index | -0.401           | -0.449           |                  |                  |                  |                  |
| log_import_diversification_index | -0.187           | -0.167           | -0.206           | -0.165           | -0.166           |                  |
| log_export_openness_goods | -0.563***        |                  |                  |                  |                  |                  |
| log_exports_services | 0.253            |                  |                  |                  |                  |                  |
| log_related_variety_patents | 0.0961           | 0.0930           | 0.237***         | 0.252**          | 0.230**          | 0.229**          |
| log_unrelated_variety_patents | 0.00342          | -0.00975         | 0.0639           | 0.0631           | 0.0719           | 0.0774           |

| Spatial rho | -0.596*          | -0.605*          | -0.630*          | -0.631*          | -0.493           | -0.472           |

| Observations no. | 330              | 330              | 330              | 330              | 330              | 330              |

*p<0.05, **p<0.01, ***p<0.001
Source: own elaboration in Stata

The rho coefficient reflects the influence of the dependent variable in a country on the dependent variable in neighboring countries. The ρ (rho) parameters in the all models have a minus sign and a statistical significance of 90% in models 1-4, indicating a purely spatial effect of patent applications in one country on the same indicator in neighboring countries, which is not a positive one.

The results confirm expectations for the estimated elasticity coefficients (mostly), showing real, constant and consistent effects of the size of the economic activity: the higher the GDP per capita and the patent activity is more important. In all specifications, we obtained a positive and statistically significant coefficient for the dependent variable in relation to the related variety of the entire innovation activity. The related variety contribution can be understood as evidence for intensifying innovation activity, a trend observed in most countries. At the same time, the development of innovation by large types of innovative activities (unrelated variety) cannot be a support for improving innovation patenting activity, being obvious the importance of its development on related fields, as the premise of a potential multiplier effect on total activity. Our results are in line with the findings of Miguélez and Moreno [16], that also conclude on a positive relationship between the output of innovation and RV (related variety) and an insignificant relationship with the UV (unrelated variety). However, the elasticity values obtained with respect to RV are on average 0.540 [16], compared to about 0.240 on our examples. However, we have to take into account the differences of territorial units, the period and the econometric technique used.

Miguélez and Moreno [16] confirm the role of the variety in the regional knowledge stocks on improving performance in innovation, and Boschma and Iammarino [9] reach the same conclusions regarding the effects on employment and productivity. Thus, the effect induced by urban
agglomeration appears as predominantly at the expense of localization (specialization). Castaldi, Frenken and Los [15] or Autant-Bernard and LeSage [22] also highlight the benefits of diversifying activities in sectors with related technologies for better economic and innovative performance.

Findings on the role of research activity (berd) through financial expenditures confirm the results in literature, reflecting the need to support the work as a key prerequisite for innovation. The coefficients of elasticity of the number of patent applications in relation to research expenditure are within the limits found in the literature, although in some models these are still higher. Thus, the values obtained by us are on average of 0.155, similar to the estimations of Bottazzi and Peri [23], of 0.10-0.20. In terms of increasing employment, this is compatible with a shift towards more sophisticated, intensive technology sectors. Including the variable for the employment in science and technology with tertiary education (scientists and engineers), the positive effect seems to be a substantial one. A significant but negative influence is the return of trade opening for exports and imports of goods, which could be explained by the fact that a significant part of these do not belong to the high technology ones. However, as we will see below, there is some positive direct influences of trade openness.

4.3 Direct, indirect and total effects

The interpretation of the estimation parameter in spatial models is not the same as for models without space connections. The direct effect is the classical impact of a variation in an independent variable on the dependent variable and is measured by the estimated coefficient $\beta_i$. Indirect effects are the consequence of space-labeled variables introduced into patterns, these effects also being called spatial spillovers that measure the impact of a change in a variable in the region $i$ and on the other regions. In other words, spatial spillover effect occurs at the same time as a causal relationship between the characteristics of the observations (countries in this case). Both types of effects depend on the spatial model and the spatial matrix used. In SDM models (similar to autoregressive Spatial Autoregressive Model (SAR) and Spatial Autocorrelation Model (SAC), the effects may be different due to the effects of endogenous interaction [24], which causes feedback effects in the sense that the impact (the change) that occurs on the intensity of innovation in some neighboring countries passes over to other countries and then back to those that have caused that impact (change). The empirical results in Table 3 comprise only the spatial effects resulting for three selected models (of the estimated ones), retaining only variables whose coefficients have statistical significance.

<table>
<thead>
<tr>
<th>Effects</th>
<th>Model number</th>
<th>log_gdp_per capita_pps</th>
<th>log_berd</th>
<th>log_scientists_engineers_15_74</th>
<th>log_import_openness_services</th>
<th>log_import_openness_goods</th>
<th>log_export_openness_goods</th>
<th>log_related Variety_patents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct 1</td>
<td>0.900***</td>
<td>0.184**</td>
<td>0.105</td>
<td>-0.646***</td>
<td>-0.547***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.088***</td>
<td>0.179**</td>
<td>-0.0227</td>
<td>-0.184</td>
<td>-0.547***</td>
<td>0.0908</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.183**</td>
<td>0.496***</td>
<td>0.102</td>
<td>-0.682***</td>
<td>-0.547***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect 1</td>
<td>0.476</td>
<td>-0.515*</td>
<td>1.171**</td>
<td>0.145</td>
<td>-0.547***</td>
<td>0.231**</td>
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</tr>
<tr>
<td></td>
<td>0.820</td>
<td>-0.487</td>
<td>1.835*</td>
<td>0.853</td>
<td>-0.830</td>
<td>0.0346</td>
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<tr>
<td></td>
<td>-0.794**</td>
<td>-0.322</td>
<td>1.251***</td>
<td>0.426</td>
<td>-0.174</td>
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<tr>
<td>Total 1</td>
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<td>1.275**</td>
<td>-0.501</td>
<td>0.0233</td>
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<tr>
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<td>1.812*</td>
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<tr>
<td></td>
<td>-0.611*</td>
<td>0.174</td>
<td>1.352***</td>
<td>-0.256</td>
<td>0.0571</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: own elaboration in Stata

**Direct effects:** We can see that there are no big differences between the elasticity coefficients in the results table and the direct effects. Thus, calculating the feedback effects on the RV variable on Model 5, we obtain: $0.231 - 0.230 = -0.001$, which totally corresponds to the estimated coefficient; the
case is similar in terms of the influence of the proportion of scientists and engineers in science and technology activity, and it cannot be emphasized that this direct influence is due to a feedback process.

This means that the influence of the related variety and of the engineers employed in science and technology is solely due to the characteristics of the respective countries and does not bear any external influence. A positive feedback effect is exerted by the increase in the business sector of spending for research activity, about 14.5% (0.174-0.152, which represents 14.5% of the estimated coefficient) of the estimated elasticity coefficient due to a higher financial support of research in neighboring countries. In this sense, we can observe the direct effects of more open services imports, perhaps due to those who are intensive in knowledge.

**Indirect effects:** Differences between indirect effects are quite high, with high order sizes. Thus, there are positive spillovers induced by the increase in the share of imports of services made by neighboring countries (including intensive services in knowledge), with similar effects arising from the increase in imports of goods (in Model 4, the spillover effect is 1,079**). However, a higher share of engineers in a country does not have a positive influence on innovation in neighboring countries (in Model 3, i.e., the spillover effect on innovation of scientists and engineers has a value of - 594**, including statistical significance).

Statistically significant total effects are found in those induced by greater openness in imports of services (all models), but potential negative impact of business expenditures on research from other countries (the major contribution being the one resulting from their increase in each observation-country).

5. Conclusions

These results provide support for the research on the spatial effects of innovation activity (performance). We can summarize the main conclusions as follows. An intense innovation activity in some countries does not have a positive impact on this activity in other countries, suggesting the competitive nature of innovative products (the estimated rho coefficient is negative and significant in all models assessing these effects). Our results confirm the impact of technological variety in improving the performance of innovation activity. The estimated coefficient of the innovation output in relation to related variety (RV) has the expected positive sign in all models, but a same role of the uncorrelated variety (UV) cannot be demonstrated. Also, the direct role of R&D expenditures as a key factor for innovation is checked: the elasticity of innovation in relation to the berd variable is positive and statistically significant in all models that take this into account). There is a real and expected influence of the scientists and engineers (employees with tertiary education) share in science and technology in the relationship with the intellectual assets (patents), the elasticities being positive and statistically significant.

Some direct spatial effects that correspond to theoretical predictions may be highlighted, but under the circumstances, the estimation of indirect ones (of spillovers) proves to be more difficult (under the given conditions).

REFERENCES

19. EPO (2018), European patent applications database.