Regional Export Efficiency in the Market of Football Players

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SUMMARY

The aim of this paper is to interpret and examine the exportefficiency of professional football clubs in the Central Eastern European (CEE) regionwithin the international players' market. Some clubs in these countries realize higher and higher revenues from transfer activity, which can be interpreted as export of football clubs. The study investigates correlations between sport success and transfer revenues. CEE clubs produce nearly 100 million EUR profit annually, but there are huge differences between countries and clubs. Championships are also divided: those clubs participating in international tournaments have a powerful advantage compared to the other clubs.

Keywords: Global sport; professional football; transfer market; export; Central Eastern European region

Journal of Economic Literature (JEL) code: L83, R11

INTRODUCTION, RESEARCH QUESTION

The aim of the paper is to interpret and examine the exportefficiency of the CEE region professional football clubs in the international players' market. Export efficiency means the ratio of total revenue on transfer market compared to the size of country and GDP. Professional football players in the Top Leagues (England, Spain, Germany, France, Italy)or in Western Europe are a commonly discussed topic in relevant literature but there are very few articles about football in Eastern Europe. However, many players from CEE countries play in Top Leagues or in Western Europe.

FIFPro (International Federation of Professional Footballers) Black Book Eastern Europe (2012) examines the problems of professional footballers in Central Europe and Eastern Europe. Among other things, the study determines that of "the 3,357 professional footballers who cooperated in this study, 41.4% do not have their salaries paid on time. 5.5% of all players have to wait more than 6 months to receive their salary" (p. 5.. Furthermore 15.6% of players has been forced to train alone because the club wanted to end the contract or players did not agree to sign a new contract with the club. It is also a serious problem that "11.9% of respondents are saying that they had been approached with the idea of fixing the result of a match and more than twice of them (23.6%) are also aware of match fixing that took place in their league" (p. 10.)To conclude: the market of football players is a very complex one where processes are often blurry and data reliability is low. However, it is known that exporting players is an escape route both for the clubs and the footballers. In the past few years clubs in the region have become more successful; they are participating more often in international tournaments and as a result the export of players has increased as well. Naturally there is a mutual connection between the two phenomena, since the better a club performs internationally the more visibility the players get, and the more players it can export the higher the revenues are. In the same way higher revenues provide the opportunity to build better teams and improve youthtraining systems, which enables the clubs again to further develop.

Our main goal was to measure the export performance of football clubs. The performance can be evaluated from both a professional and financial point of view, therefore we collected data of the international achievements of the discussed leagues from the past 5-10 years and we tried to quantify the financial performance as well. Central-Eastern Europe is our research area, hence we were evaluating the whole region and the differences among countries both on the level of clubs and leagues.

We examined nine countries from Central-Eastern Europe: Bulgaria, Croatia, the Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Slovenia. Common characteristics of them are the followings: post-socialistic history (similar tradition, economy, culture, external environment) and EUmembership or candidate membersof the EU (Serbia).

The main business revenues of the football companies are the following: ticket and season-ticket revenues (consumer market), revenues on player transfers (players' market), revenues generated from broadcasting rights (broadcasting rights market), and revenues from commercial rights: sponsorship revenues (sponsorship market) and merchandising revenues (merchandising market). This paper mainly concentrates on the players' market, but naturally the changes in the players' market have an impact on any other market. For example the number of stars in a team can increase the interest of media companies. On one hand, stars enhance the consumer's identification and strengthen fan

loyalty, and on the other hand, stars are the product of the media and play an important role in its businesses (more media attention leads to consumer, more sponsor and related revenues)(András 2003).

It is a specialty of the region that a lot of publicly available financial data cannot be accepted unconditionally, since the operations of companies and sport organizations are not completely transparent. The reported revenues connected to football are either close to zero or they lack credibility. Of the five markets it is the players' market where the transactions are more traceable, which is one of the reasons why we chose it for examination. The data was gathered from the internationally acknowledged website transfermarkt.de. Our presumption that transfers with higher amount mean international transactions became verified after collecting data, as the financial value of national transfers was very low.

In this paper firstly we aim to present the related literature (sport, players' market, export, etc.) and the available data on the CEE region that can be found in various publications. Secondly, we evaluate the professional performance of CEE leagues and clubs and thirdly, we examine the exportefficiency of football players.In the international sport management literature we have no found former investigations with a focus on CEEfootball. The research could be of practical use for CEEclubs (strategy-making, transfers, youth sport) and for National Associations (support of clubs, regulation of players' market, etc.).

The hypotheses of the paper:
H1: The CEE region has a weak efficiency in European Football (sport and financial failure)
H2: There is a large difference among the clubs of the CEE region (in terms of both sport and financial results)
H3: There are few clubs in some countries which are very effective (sport success and transfer revenues)

LITERATURE REVIEW

To investigate the transfer market of CEE region we have to describe the main points and markets of professional football, internationalization of sport business and characteristics of the players' market.

Interpretation of business globalization and professional sport

Strategies of leading companies in different competitive industries are very often characterized by the ability to adapt fast to changed circumstances. Survival of the fittest is a mechanism not just in evolution, but also in those professional sports where sport companies are service providers in the competitive show business. It is important to think through what factors drive the operations of these companies nowadays. Using STEP (Social-Technology-Economic-Political) analysis, it has been concluded that the three biggest challenges from the economic point of view (András, 2011) are: (1) the global economy as the framework of the (sport) business (Chikán, 2010), (2) the economic recession (industry-level crisis, nation-state and regionalist constraints), and (3) the changing economic systems (Czakó, 2012).

Social: Glocalism	**Technology:** Player monitor and evaulation systems Predictive analytics Global Player Exchange
Economic: Global economy as frame of business and sport (business) activities Global transfer market Economy systems	**Political:** Decreasing limitations of labor movement European Committee Financial Fair Play regulations Tax differences

Figure 1. STEP analysis on market of professional sportmen; Source: András & Havran (2014)

The connection between professional sport and globalization is not a new topic. Defining globalization from business perspective based on Chikán (2008), leaders of professional sport companies in decision-making situations take into consideration opportunities from all over the world. Though today these decisions are most likely to remain between the borders of Europe, we will not need to wait long to see those borders enlarge, taking for instance the changed roles of Japan and the USA in the industry. These countries founded theirs own system of soccerleagues without any former traditions.

As Chikán (2008) defines economical globalisation from the business perspective, it is the decision makers who are in the center, since whether the decision is about their input or output markets they are evaluating their opportunities on a global level. Similarly, the markets of professional sport are global, too (András, 2004), although to different extents (Andráset al., 2012).

What is a global sport?

There are several sports mentioned as global sports both in Hungarian and international literature. What made these sports (football, basketball, hockey and Formula 1) global is typically their popularity and their compatibility with the media. It is worth mapping those factors which enable a sport to become global. A few of these can be traced back to the immanent characteristics of a sport, to its historical background. During the emergence of modern sport, geographical expansion and establishing monopolistic structures and international alliances to coordinate the unification of the rules of different sports were very important milestones. Business globalisation aims for standardization (Demeter, 2010), which is also an important element in sports, realized in the form of unified game rules.

Another enabling factor is the existence of popular international events, tournaments which by generating broadcasts make the market of media consumption global, hence these events can be followed all over the world. The tournaments of professional football (both on club and national levels), thanks to their geographical spread, offer access to regional and global markets.

Table 1
Competitions of professional football according to geographical expansivity

	National	Regional	Global
National teams		European Championship qualifications and final	World Cup qualifications and final
Clubs	national championships, cups	Champions League and European League	FIFA Inter Club World Cup

Source: elaborated by the authors

Nowadays the Internet offers many more new opportunities. Companies with a clear marketing agenda can reach markets of larger geographical extent. Based on Chikán (2003), András (2004) interprets the sponsorship on local, area, national, regional and global level in regards of the market of sponsors. The globality of the players' market is well known. Even in the previous closed economical systems international transfers were not rare at all and today nationalization of players is becoming more and more common. Different collaborations (from simple contracts to foreign investments) between sport companies are now part of the everyday routine of professional sport (András &Jandó, 2012).

The global transfer market

Due to the media, media capability and international competitions, professional football is clearly a global sport. The players' market is a special labour market, where basically a personal right with special value of property is the subject of the agreement: the disposition about the playing licence for a given period (maximum 5 years in the EU) (András, 2003).

This right with value of property is very closely linked to the person of the player and includes all his abilities, both physical and mental, related to his sporting activities. Therefore, it is not transferable or vendible, but like a licenceagreement, the disposition of the playing licence is transferable. After the conclusion of the contract, the right of disposition falls back to the athlete. During the term of a contract, the football company can transfer the right of disposition to another football company in exchange for compensation (called a transfer fee). The ownership of his own playing right provides the player with an additional revenue force to his salary, which is the signing bonus. Nowadays, at the time of transferring the disposal of his playing licence to the football company of his club, the player transfers the right of using his image rights (i.e. in merchandising) – typically for extra compensation – as well. Questions concerning insurance form an important part of player contracts, as injuries and accidents can cause severe losses to both parties (András, 2003).

A summary of the main characteristics of the players' market (András, 2004) can be seen in Table 2.

Table 2
*Main characteristics of the players' mark*et;

Product (subject of trade)	the transfer of the disposal about players playing licence
Main characteristic of the subject of trade	double deal: labour recruiting and acquisition of a value of property
Value drivers	– pre-determined characters of the player (physical, mental, social), – current contract (buy-out clause, length of contract) – added characteristics
Market-players: – **Seller** – **Buyer** – **Mediator**	- 1) If contract expired: the professional player as an athlete, a person; 2) If contract is running: releasing football company. - Signing football company. - Player agents, managers, scouts.
Influencing factors of the behaviour on the market	- transfer fee

Source: András (2003)

The transfer of a player is a double transaction from the point of view of the buying club: it means labour force recruitment and also an investment in a value of property (intangible assets).

Further specifics of the players' market (András et.al, 2000) are:

- Time-limited market (open twice a year)
- The longevity of a professional football career is limited (15-20 years without injury)
- Stars are hardly substitutable; an exceptional labor force
- During the span of a running contract, there is a fee to be paid in the case the player wants to leave
- Special working times (weekends)
- Fixed-term contracts (maximum 5 years in the EU).

There is a labor contract between players and sports organisation in compliance with the regulations of FIFA (*Fédération Internationale de Football Association* –the international football association) and UEFA (the Union of European Football Associations). The player market movement of a player with a valid contract between two sports organizations is called a transfer. In most of the cases[1], the signing football company pays a transfer fee as compensation to the releasing one.The appearance of the transfer fee - one of the specialities of the market – can be explained by two reasons. First, clubs (typically still operating as social clubs) focusing on player development can be compensated by it. Secondly, even bigger sports companies can consider the trade of players as a lucrative investment due to the transfer fees. That draws attention to another speciality: signing a player is not only the recruitment of a member of the labor force, but it can take the form of a serious investment decision.

The framework of globalism influences professional football, too, hence the sport companies behind the clubs can be characterized as organizations operating in international environment (Czakó, 2010). Media broadcasts and the professional system of tournaments and championships are also signs of an international characteristic. Their leaders have to coordinate operations in many countries.

András (et. al. 2000) categorized countries on the basis of their role on the European players market of football. The transfer balance (the difference of transfer revenues and transfer expenditures) and the transfer volume are the dimensions of the categorization.This shows the importance of the clubs of the given country on the international players market. The transfer volume was calculated as the average of the gross transfer revenues and transfer costs. If the transfer has a positive balance, then the given country is a net seller, while in case of a negative transfer balance, the country plays a net buyer role. Figure 2 shows the results of their research.

	Negative balance	**Positive balance**
High volume	"Purchasers" England, Spain, Germany Italy ← Russia ←	"Traders" Portugal, Netherland France
Low volume	↑ "Small customers" Turkey, Ukraine, Greece	"Suppliers" Scandinavians, post-socialist countries

Figure 2. "International ways" of soccer players: categorization of countries in the European transfer market, Source: Szabados, 2012

A higher quality game presumes higher transfer volumes. The top countries in terms of sporting results and economic strength of their clubs can choose from the broadest range of talented players. Their activity on the players' market confirms that. The connection can be interpreted in the opposite way, too: a country with high transfer volume has presumably a high quality football game.

The investigation of the question of whether there are trends in player movements between countries on the players' market of football, presents interesting results. András et al. (2000) investigated three countries in detail: Italy, England and Germany. Nowadays we see Spain and Russia as "Purchasers". The leagues of CEEregion have a relatively small value in the transfer market but the balance is mainly positive.

Some research (for example Rothenbuecher et al., 2010 p.4.) shows a positive relationship between net transfer balance and team performances. In leagues where clubs spent more money for new players, clubs can achieve better on-field performance. The number of players with outstanding abilities (who can influence the outcome of match) is limited and players are limited resources of football clubs.

A UEFA studyshows astrong correlation between sport success (UEFAranking of clubs) and revenues (UEFA, 2008 p. 49.). Another UEFA study (2009, p. 74.) shows a similar correlation between sport success (rank in national league) and expenditure on personnel. There is a huge difference between clubs of top leagues and we can conclude that to reach a better sport result, clubs need to invest much more in wage costs.

Based on the above-mentioned reasons we can conclude that for CEE clubs it is worth focusing on youthtraining systems. In addition to ensuring their own success, there is also the effect of increased revenues. Thanks to international performance their players can get visibility and they can realize huge profits on transfers.

METHODOLOGY

In the first part of the research we describe the relevant parts of published studies about sport success and financial results of leagues and clubs of the examined region. In the second part of this chapter we present the results of our own research. To prepare the first part we used data from uefa.com and the studies of relevant organizations shown inTable 3.

Table 3
Summary of examined studies

UEFA	**CIES Football Observatory**	**KEA-CDES**
Club Licensing Benchmarking Report Financial Year 2008, 2009, 2010, 2011, 2012	Annual Review of the European football players' labour market 2011 and 2012 - extract	The Economic and Legal Aspects of Transfers of Players 2013
Bechmarking Report on the clubs qualified and licensed to compete in the UEFA competition season 2013/14	Demographic Study 2013 and 2014 - extract	

Source: elaborated by the authors

[1] Except for cases where the contract between player and sports organisation includes a clause that the club renounces any transfer fees.

In the second part of our investigation we carried out primary research about the transfer results of CEE clubs. The research used data of the reliable statistical source transfermarkt.de and we followed realized transfers on uefa.com. One limitation of the research that Transfermarkt.de gives only estimations (because almost every transfer is a business secret), but there is no other reliable and public database and Transfermarkt.de uses similar methods so data are comparable. We collected data about transfers (number of transfers, amount of revenue, expenditures, profit/loss) by leagues and clubs from 2009/2010 to 2013/2014. We summarized the sport success of clubs using data from uefa.com.

RESULTS AND DISCUSSION

First of all we could looked at the sport success of CentralEasternEuropean clubs in international championships. Table 4 shows the UEFA rankings (Weighted calculation from results of clubs in EL and CL in last 5 years.)of CEEleagues (uefa.com)

Table 4
UEFA rankings of CEE leagues

UEFA ranking	19	20	21	22	25	27	28	29	34
League	Czech	Poland	Croatia	Romania	Slovakia	Serbia	Bulgaria	Hungary	Slovenia

Source: uefa.com

The league of theCzech Republic has the best position in the region, and the Polish, the Croatian and the Romanian leagues are close to it. Four countries have a slightly weaker position and Slovenia has the worst place in this ranking. This ranking is important because the clubs of the countries which are in better place can start EL or CL in better position.

From all 9 examined countries 4 clubs each can participate in the two international cups of UEFA (UEFA2013, p 11) from different qualification levels. In the Champions League (CL) all of them start from the second qualifying round (eufa.com), while in the European League (EL) the Czech cup winner has its first match in the third round, all other clubs start from the first or second round. What's more, some clubs can join the European League from Champions League qualification (uefa.com).

Table 5 shows how many clubs of the region made it to the group stage and the best 16 in UEFA cups (CL, EL) in the last 10 years. 342 clubs in the region participated within 10 years and only 26.9% of them got into the group stage. Altogether 8 clubs were able to remain among the best 16 teams, which is slightly more than 2% of the participants. Romanian and Czech clubs outperform the others in the CEE region, since around half of them qualify for the group stage in some international league.

Table 5
Sport efficiency of clubs (2010–2014) - 1

League	Total	Group Stage	Group stage %	Best 16	Best 16%
Romanian	48	25	52.08%	4	8.33%
Czech	41	19	46.34%	2	4.88%
Croatian	35	10	28.57%	0	0.00%
Serbian	38	10	26.32%	1	2.63%
Bulgarian	39	9	23.08%	1	2.56%
Polish	38	8	21.05%	0	0.00%
Hungarian	34	5	14.71%	0	0.00%
Slovakian	34	4	11.76%	0	0.00%
Slovenian	35	2	5.71%	0	0.00%
Total CEE:	342	92	26.90%	8	2.34%

Source: elaborated by the authors using data from UEFA (2013), p. 13

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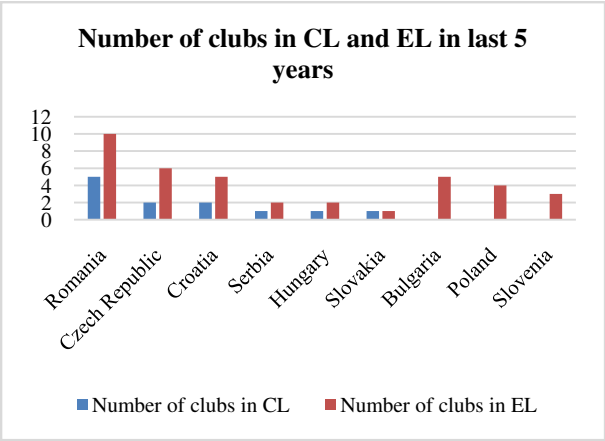
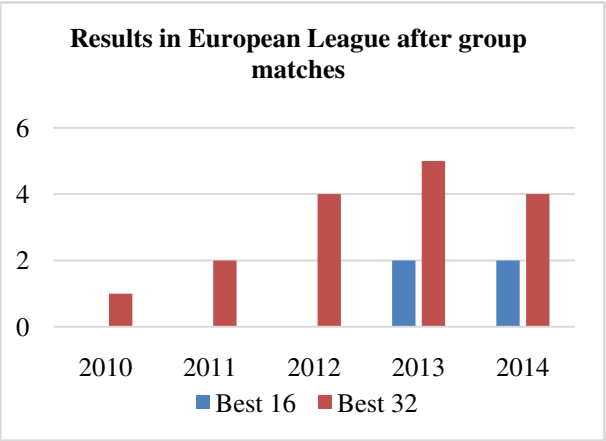
From any of the Top 5, or from the Portuguese (39 out of 59 teams) or Russian (31 out of 48 teams) championships more clubs got into the best 16 (in CL or EL) in the last 10 years than from the CEE championships altogether. See Table 5.

Figures 3and 4 show the international performance of CEE countries in the last 5 years (2010-2014).





Figures 3. and 4. Sport efficiency of clubs (2010–2014) - 2
Source: elaborated by the authors with data from uefa.com

The figuressum up the CL and EL participants at the group stage, while Table 6 shows which clubs got into the best 32 and best 16 in the European League.

Table 6
Sport soccess of CEE clubs in the European League from 2010 to 2014 after Group Stage

European League	Best 32	Best 16
2014	Ludogorec Razgrad, Viktoria Plzeň, NK Maribor, Slovan Liberec	Ludogorec Razgrad, Viktoria Plzeň
2013	Viktoria Plzeň, Steaua Bucureşti, BATE Bariszav, CFR Cluj, Sparta Praha	Viktoria Plzeň, Steaua Bucureşti
2012	Steaua Bucureşti, Viktoria Plzeň, Wisła Kraków, Legia Warszawa	-
2011	Sparta Praha, Lech Poznań	-
2010	Unirea Urziceni	-

Source: elaborated by the authors with data from uefa.com

We can see from the improving trend of the CEE region regarding participation in international cups. One of the main reasons behind this trend is the 2009 changes in UEFA regulations: with the establishment of a "champions route" the non-champion clubs of big leagues do not play with the teams of these countries, furthermore the ones finishing the CL in the last qualifying round can continue to play in the EL from a very eminent position.

It is worth highlighting that there was only one team in the last 10 years who made it to the group stage in the Champions League: Sparta Praha in 2004 (they lost against AC Milan 4-1).

Looking at the positions of clubs internationally we can see (Figure 5) that the Romanian and Czech clubs represent the region to the highest extent among the best 100 and 200 teams. Naturally, this is in line with the UEFA rankings regarding the championships.In the best 100 there are only 5 clubs from the region. Besides the clubs of Romania and Czech Republic we can find one Croatian club.

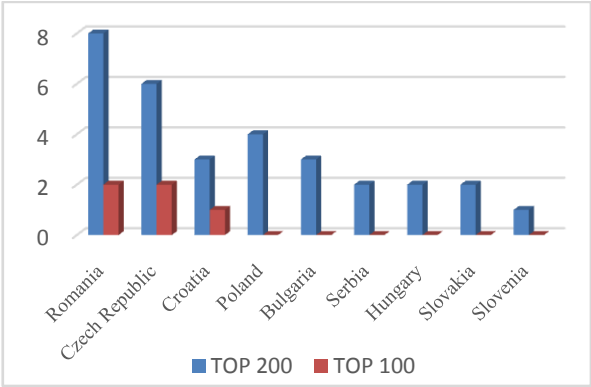


Figure 5. Number of CEE clubs in the top 100 and top 200 clubs, by UEFA ranking
Source: elaborated by the authors using data from uefa.com

It is an interesting fact from UEFA statistics (UEFA, 2013) that among those clubs who played the most CL and/or EL matches in the last 10 years Steaua Bucarest possesses the eminent 6th place (right before Bayern Munchen). We have to add that in the statistics they took into account the qualifying rounds too, and it also helped Steaua Bucarest that they managed to play well in the EL, which is significantly easier than the CL.UEFA gives 75% of the performancerevenues to CL participating clubs in 2013-2015,19% goes to ELparticipants and the remaining 6% to non-participants (for solidarity), which more or less maintains the status quo of the clubs (UEFA, 2013). According to UEFA estimations the internationally active clubs of different championships can be categorized as inTable 7 (based on revenues).

Table 7
Distribution of CEE clubs by club revenue

Country	10-50 M EUR	1-10 M EUR	0-1 M EUR
Poland	1	3	0
Czech Rep.	1	3	0
Croatia	1	2	1
Bulgaria	0	4	0
Hungary	0	4	0
Romania	0	4	0
Slovenia	0	4	0
Slovakia	0	3	1
Serbia	0	2	2

Source: elaborated by the authors using data from UEFA (2013), p. 13

Three clubs have revenues higher than 10 M EUR and 29 clubs are between 1 and 10 M EUR in CEE. This means that a small percentage of UEFA money comes to the region (since there few CL and EL participants), but at the same time for those clubs who do get in to these leagues it is a chance to stand out from the region because they get high revenues compared to their average budget (in the 2012/2013 seasonthe UEFA paid 8.6 M euros for getting into the CL group stage – uefa.com). Within the region there are quite large differences. Figure 6 shows the concentration of teams coming from the same league with regards to their revenues (UEFA,). These amounts have crucial importance, since they can be examined as verifiable and accurate market revenues.

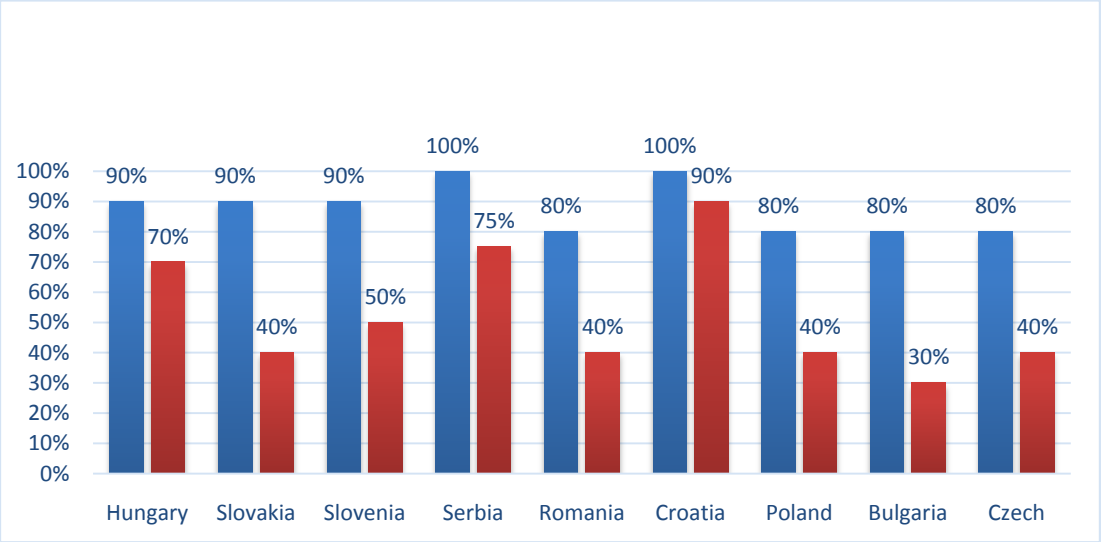


Figure 6. Concentration of club success: Percentage of national titles won by the three most successful teams and by one team in CEE region from 2004/2005 to 2013/2014
Source: elaborated by the authors using data from uefa.com

Looking at the teams participating in international leagues we can see that the Hungarian, Romanian, Bulgarian, Serbian, Slovenian and Slovakian clubshave similar incomes, while there are significant differences among the Polish, Czech and Croatian clubs (UEFA 2013 p. 38.). This means that successful teams remain very hard to beat in these championships. The following graph showing the concentration of the last 10 years leads us to the same conclusion.

In every country the three most successful clubs won 80-100% of the championships and the most successful one won at least every third in the last 10 years. As a result, it becomes very hard for new clubs to get to the frontline and get the chance to participate in the Champions League, to increase revenues and to be able to export players on the international market.

The 2013 UEFA report (UEFA, 2013) highlights 3 teams from the region: Legia Warsaw, Lech Poznan (Poland) and Partizan (Serbia). They had over 3 M EUR profits from exporting players. According to the report transfers meant 22% of the overall revenue in Polish clubs, and 21% of revenue in the case of Serbian clubs.If we examine the revenue ratio of transfers, Partizan takes the third place with 60%, Lech Poznan is over 5.40%, and Warsaw is above 8.20%.

As we mentioned before, clubs of the region do not have significant revenue from merchandising market and data are not actually verifiable about the amounts gained from other sources revenue (sponsors, consumers). The low revenues coming from other markets can also be explained by the small number of spectators in the region: if there are no consumers there are no sponsorship, merchandising or commercial revenues either.

According to the data collected by UEFA (2012) the average and aggregated numbers of spectators are both quite low. Only Poland, Romania and the Czech Republic were involved in their data collection, since the other countries lag behind even the English fourth division. (As a comparison the average of the German second division is above 17000 while the Dutch first division is above 19000).

Table 8
Number of spectators at club matches in three countries (2012/2013 season)

League	Average number of spectators	Number of clubs	Number of matches	Total number of spectators
Poland	8,409	16	240	1,830,615
Romania	5,184	18	306	1,586,321
Czech Republic	4,798	16	240	1,151,505

Source: UEFA (2012) pp. 36-37

Regarding the number of spectators (UEFA 2012, p. 39), between the 2011/2012 and 2012/2013 seasons, we can see that Bulgaria had more than 20% growth and the Croatian and the Romanian leagues also show an increase, while there is a slight decrease in Serbia (5-10%) and a bigger one in Hungary and Slovenia (more than 20%). This is also in line with the results of a survey where local football fans were asked to name their favourite clubs and among Hungarians, Slovenians and Slovakians Barcelona was the most common answer, while in the other countries it was one of the local clubs (UEFA,2013, p. 41).The 2014 issue of CIES shows the number of club-trained players in the adult teams. Nine clubs of the region got into the best 20,which leads us to the conclusion that the clubs in this region focus on their youth training systems(CIES (2014) p. 20).The 2014 issue of CIES collected those clubs which export the most football players to the Western European leagues (CIES, 2014 p. 20.)). From the region the report highlights the Serbian Partizan, but there are also some other clubs in eminent positions.

CIES notesthat„second most prolific training club is Partizan Belgrade, followed by Barcelona. The latterclub tops the Bbig-5 league table, followed by another very competitive Spanish team. Real Madrid. Many other top flight teams are in the top positions of the ranking"(p. 21.).

Primary research

Figure 7 depicts the overall profit in the region coming from the players' market divided by leagues. Clubs in the CEE region altogether realized a profit of 411 M EUR in the last 5 years, from 2010-2014. The exports of the Serbian, Romanian and Croatian championships represent 64% of the total. 15% of the whole profit belongs to Partizan Belgrade.

Not all transfer revenues come from exports, but the financial value of the national transfers is minimal compared to the international ones.

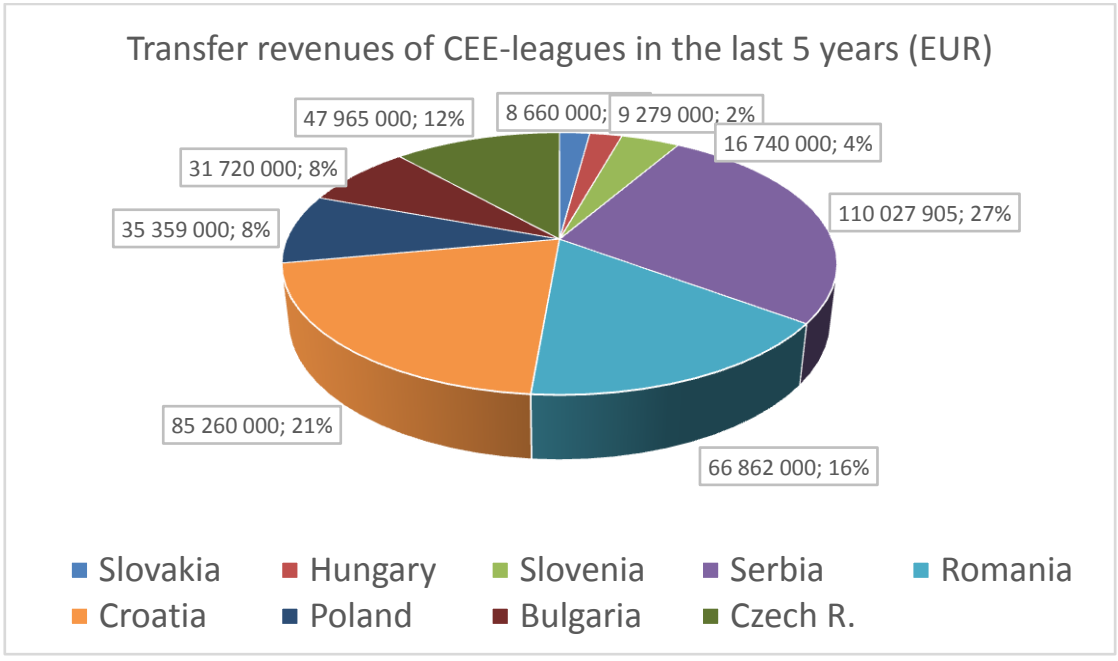
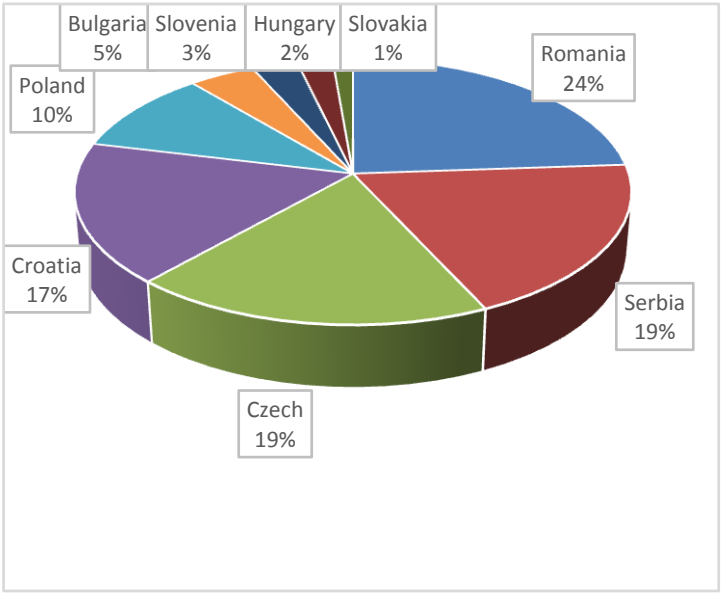


Figure 7. Transfer revenues of CEE leagues (2010-2014),
Source: elaborated by the authors using data from transfermarkt.de

Championships and national teams of countries with similar traditions and economies show various development paths, which can be very well illustrated by the number and value of players transferred to more developed leagues in Western Europe. It is worth studying the models of successful countries and clubs.



League	Number of players
Romania	71
Serbia	57
Czech	55
Croatia	51
Poland	30
Bulgaria	13
Slovenia	9
Hungary	7
Slovakia	4
Total	**197**

Figure 8. Number of players sold above 1 M EUR between 2004-2014 from the CEE region
Source: elaborated by the authors using data from transfermarkt.de

In the comprehensive research paper of KEA-CDES about the European players' market we can find a short analysis for every country of the 2010-2011 season. It is worth comparing this data with the results of our research, which contains data of the clubs in the respective countries and goes back for several years.For detailed information see Table 9.

Table 9
Comparative table of KEA-CDES and current reserarch

Country/league	KEA-CDES (2010/2011)	Current research (2009/2010-2013/2014)
Poland	Recruits: mainly from Serbia Transfer balance of league: surplus of 4 M EUR Concentration: the 3 most important clubs in terms of transfer revenues represent 75% of total revenues The turnover of the league is 90 M EUR, i.e. an average of 5 M EUR per club. Mostly operating deficit Transfers enable some of them to have positive results	Total transfer profit of Polish League from 2010 to 2014 was more than 35 M EUR There are 4 Polish clubs in top 200 in 2014UEFA ranking but only 3 have positive balance from transfers Lech Poznan and Legia Warsaw had more than 10 M EUR profit from transfers from 2010 to 2014 Export way: Germany (with high values)
Romania	Recruits: from domestic market and for Portugal (many Portuguese coaches) A few years ago the country was clearly an exporter of players; this seems less the case today International and domestic transfer market. Balance: + 18 M EUR The turnover of the league was 120 M EUR or 5 M EUR on average per club The operating result was negative (20% of income), but this did not prevent some of them (6) making profits of about 0 to 10% of their income. Romanian clubs are largely dependent on the sale of their players in order to stabilize their financial situation	Total transfer revenues of Romanian League from 2010 to 2014 was almost 135 M EUR, profit was 67 M. Romainan clubs have many recruiting costs compared to the Serbian and Croatian Leagues. There are 3-4 clubs with more than 1 M EUR profit in every year from transfers There are 8 Romanian clubs in the top 200 in 2014 UEFA ranking, but 2 teams are out of first league last year and others also have variable sport success CFR had 5 M EUR, Dinamo Bucarest had 3 M EUR average profit from transfers, most successful Steaue Bucarest has had no profit in last five years

Country/league	KEA-CDES (2010/2011)	Current research (2009/2010-2013/2014)
Czech Republic	Mainly recruit in neighbouring countries such as Slovakia Specializes in the training and promotion of young players, as shown by the average age of players who play there. Therefore, recruitment favours very young players (23.2 years) and takes place mainly in the domestic market - up to 74% Exported 118 players to the 36 European leagues in 2009 (Poli 2010). During the 2010-11 season, Czech clubs collected a total of €26m relating to the transfer of players (263) for expenditure of 5 M EUR (267 transfers), resulting in a largely positive balance (21 M EUR) and confirming the training policy of clubs. The average turnover per club is only 4 M EUR. The operating result is negative up to 10% of the income of the clubs in the league. Transfer operations enable many clubs (5) of this country to balance their accounts	Total transfer revenues of Czech League from 2010 to 2014 was 48 M EUR There are 6 Czech clubs in the top 200 in 2014 UEFA ranking but only 3 have positive balance from transfers Victoria Plzen has the best on-field results in the last few years but they realized only 1.27 M EUR profit on the transfer market from 2010 to 2014. Plzen recruits mainly from Czech League and obtainss transfer revenues from Germany Sporta Praga and Slavia Praga had about 2 M EUR average annual profit from 2010 to 2014
Slovakia	Mainly recruited in the Czech Republic (49 players) Exported 92 players to the 36 European leagues in 2009 (Poli 2010). Transfers revenue in 2010-11 amounted to 3 M EUR for 196 transfers This enabled the league to achieve a positive balance (2 M EUR). The turnover of the Slovakian league was 24 M EUR, i.e. 2 M EUR on average per club	Number of clubs in top 200 in UEFA ranking is 2. Total transfer revenues of Slovakian League from 2010 to 2014 was 11.63 M EUR, profit was 8/66 M EUR. In 5-year horizon Slovakian clubs cannot realize a significant and continuous profit from transfers
Hungary	Most recruitment takes place in Serbia (21) and Croatia (10) Transferred 288 players in 2010-11, generating total transfer revenues of about 6 M EUR. This enabled the country to have a positive balance (3 M EUR). In 2010, the estimated average income of clubs was 1 M EUR. 9 out of 16 clubs made an operating profit This deficit was more than offset by a significantly positive balance of transfer fees which enabled an overall positive net result for the league	Number of clubs in the top 200 in UEFA ranking is 2. Total transfer revenues of Hungarian League from 2010 to 2014 was 18.1 M EUR, profit was 9.28 M EUR. In 5-year horizon Hungarian clubs cannot realize significant and continuous profit from transfers
Slovenia	Mainly recruited in Croatia (10) Slovenia transferred 197 players for total revenues of 11 M EUR. As recruitment is mostly made for free (free players or who reached an agreement with their previous clubs), its balance of transfer is strongly positive (11 M EUR) In 2010, the estimated average income of the clubs was 1 M EUR Slovenia is one of the countries with the most important operating deficit: 30% of income of the league The balance of transfers can generate a positive net result	There is only one club in the top 200 in UEFA ranking Total transfer revenues of Slovenian League from 2010 to 2014 was 18.42 M EUR, profit was 16.74 M EUR In 5-year horizon Slovenian clubs cannot realize significant and continuous profit from transfers
Bulgaria	Recruits largely in Brazil (12 players) and Cyprus (9) Generated 11 M EUR transfer revenues Bulgaria had a positive balance of transfers (9 M EUR). The estimated average income of Bulgarian clubs is 1.2 M EUR The operating deficit of Bulgaria reaches 30% of incomes Transfers do not have enough impact to significantly improve the net situation	Number of clubs in the top 200 in UEFA ranking is 3 Total transfer profit of Bulgarian League from 2010 to 2014 was 31.72 M EUR

Country/league	KEA-CDES (2010/2011)	Current research (2009/2010-2013/2014)
Serbia		Partizan Belgrad won 7 seasons from 10 from 2004 to 2014 Total transfer revenues of Serbian League from 2010 to 2014 was almost 127 M EUR, profit was 110 M EUR. Partizan Belgrad realized about 50% of transfer revenues of Serbian League There are 3-4 clubs which have more than 1 M EUR profit in every year from transfers
Croatia		Total transfer profit of Croatian League from 2010 to 2014 was 85.26 M EUR Almost 70% of this profit was realized by Dinamo Zagreb (32.4 M EUR) and Hajduk Split (26.26 M EUR) – very concentrated Number of clubs in the top200 in UEFA ranking is 3.

Source: elaborated by the authors using data of KEA-CDES (2013)

The quality and development of human resources is particularly important for CEE clubs, because they cannot buy stars and don't have enough revenue from other markets.If we are looking at export of players in comparison with the population and the GDP of the given country, we see that the highest exportsare from Romania, Serbia and Croatia, and the two latter are the most efficient. The relatively large country of Poland and the medium-sized Czech Republic achieved average performance, while the other four countries' export performance can be categorized as poor, especially regarding medium-sized Hungary and Bulgaria.

Table 10
Classification of leagues by efficiency and country size

Results/Country size, GDP	Small	Medium	Large
Poor	Slovakia, Slovenia	Hungary, Bulgaria	
Average		Czech Rep.	Poland
Good	Croatia, Serbia		Romania

Source: elaborated by the authors

Effects on national teams: In Table 11we collected the countries who were able to participate in international tournaments (EC, WC, Olympics, U20-U21 WC) in the last 12 years.

Table 11
National team sport success

Country	EC	WC	Olympics	U20-U21 WC
Serbia (with Montenegro until 2006)		2006, 2010	2008, 2004	
Croatia	2012, 2008, 2004	2014, 2006, 2002		2011, 2013
Poland	2012 (as organizer), 2008	2002, 2006		2007
Slovenia		2002, 2010		
Slovakia		2010		
Hungary				2009
Bulgaria	2004			
Czech Rep.	2012, 2008, 2004	2006		2009, 2007
Romania	2008			

Source: elaborated by the authors

In the last 12 years only Hungary was not able to qualify for the adult EC or WC. Serbia made it twice to the Olympic Games. On the U20-U21 and adult level Croatia and the Czech Republic are the ones standing out from the crowd.

CONCLUSIONS

Championships and national teams of countries with similar traditions and economic backgrounds show various development paths which can be very well illustrated by the number and value of players transferred to Western

European leagues. It is worth studying the models of successful countries and clubs.

We found the following answers for the hypotheses:
H1: The CEE region has weak efficiency in European Football (sport and financial failure): True. Regional clubs are not too successful, but we found an improving trend. Revenues, and mostly transfer revenues of the region are getting higher.

H2: There is a big difference among the clubs of the CEE region (in terms of both sport and financial results)

True. We identified large differencesamong leagues and alsoamong the clubs inside national leagues (the clubs that are playing in international cups and the others).

H3: There are few clubs in some countries which are very effective
YES, there are some very successful clubs which stand out from the field. These clubs can use earnings from international cups and transfers very successfully and they can keep their leading position in national leagues and in the region. The outstanding youth academy system and continuous international appearances can be core competences of football clubs in the Central and Eastern European region.

Our main conclusions are the following:

- football of the CEE region has specific characteristics compared to WesternEurope,
- we found significant revenue and profit in the transfer market in CEE,
- the number of successful clubs in the CEE region will decline.

Limitations of the research

- problems with transparency: hidden data (about revenues, transfer options, etc.) – see FIFPRO Black Book about EasternEurope
- transfermarkt.de uses estimates
- not all transfer revenue comes from exports, but the financial value of the national transfers is minimal compared to the international ones
- nationality of players is not examined – conclusions about success of national teams is a limited explanation.

Further investigations

Our plan is to expand the research and examine the nationality of players. It could be interesting todo casestudies about the most successful clubs of the region in the transfer market (for example Partizan Belgrad). Our aim is to examine the youth academy system and strategies of successful clubs and associations of the region. We would like to followup the careers of players from the CEEregion to see what level they can reach in European Football.
We hope we have managed to fill a gap with this paper and plan to prepare an international study with other researchers of this region.

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Characteristics of Non-corporate Funded Projects

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SUMMARY

Implementation of effective projects is a key strategic challenge but harmonisation of the project efforts and organisational interestmaybe difficult due to the various objectives of the stakeholders. Furthermore, the funding structure has a fundamental impact on project management processes, and therefore the general guidelines should be reconsidered. The paper gives a review of the characteristics of projects that are funded by the EU or other grant systems.

Keywords: project management, quality management, project funding.

Journal of Economic Literature (JEL) code: G32, M19.

INTRODUCTION

Project management theory and methodology is widely applied;however, there are more and more new challenges. Effective project management requires many personal (managerial) and organisational experiences that are often missing. These problems become noticeable after starting the project (after the successful application process in case of European Union or other programmes). A call for proposals gives relevant possibilities for organisations to expand or develop the functions and to support the implementation of new strategic efforts. It is also available to substitute loans as funding sources. In the EU grant sources have become one of the most important capital inflows, especially for small and medium-sized organisations.

The characteristics of grant-funded project justify the rethinking of both organisational management and the general project management toolset. There are special requirements for the project management team, staff, documentation and reporting system, etc. that may be inconsistent with the organisational structure and culture. Theoretically the projects should support the corporate strategy, although in practice we often see the opposite. Applying a project quality management approach and tools can reverse this situation.

There are various initiatives, programmes and funding forms. I call these grant-funded projects as a summarising expression of each project that has a full or partial financial background from the EU or a national or regional programme/fund, and the proportion of corporate financial sources is absentor strictly limited. In contrast, the goals, conditions and financial sources of corporate-funded projects are internal.

The paper aims to reinterpret and refine the approach of project management process. However, the findings are generalised due to legal and ethical requirements, those are based on practical experiences of the author in planning and implementing grant-funded project.

THE FUNDAMENTAL CHALLENGES OF INTEGRATING QUALITY APPROACH

The findings of Cleland (1994) express the role of projects appropriately: running projects by an organisation clearly signals that the organisation is changing in order to meet future expectations. A project is a temporary endeavour undertaken to create a unique product, service or result (PMI 2013):

- temporality means a definite start and end time of the set of tasks,
- uniqueness means a new level of performance,
- endeavour means work efforts and costs related to the tasks.

From an organisational viewpoint a project is a structural coordination tool (Dobák 2004) that allows the temporary reallocation of resources, functional levels and organisational units. This is necessary because novelty means changes in normal operation. Coordination and proper regulation is important to avoid or reduce conflicts within the organisation. The reason for this is that executing the project tasks eventually uses the common resources (i.e. project tasks withdraw resources of operation that may temporarily lower the efficiency). Personal conflicts can be highlighted: the same person is the member of the daily operation (with expectations of efficiency) and the project team/staff (with a different set of expectations) in parallel. The conflicts resulting from blended decision-making practice may also hinder the realisation of project results.
The risk of conflicts mentioned above is manageable by a consistent approach that clarifies the tasks and

responsibilities of project stakeholders and keeps the balance between project and organisational interests. Based on Verzuh (2011) the most important aspects are:

- Staff: the resource needs of projects differ from each other both in quantity and quality. Critical problems are granting expert staff (shared with normal operation or external application) and decisions about the staff after closing the project. The problems appear exponentially in the case of parallel projects within an organisation.
- Estimation: time and budget must be defined in the project planning stage; since this is before the execution, estimation is inevitable. Changes may appearover time that induce the need for modifications of the planned tasks or the budget. Too strict limits (prohibition of modifications) make the progress of the project impossible or force over-estimation of resource needs during the planning.
- Division of competencies: a project requires the overset of the usual structure. Unclear responsibilities and competency systems are drawbacks to performance.
- Control of information: the normal operation is usually time-oriented with annual reporting, which especially in the case of small and medium-sized enterprises is usually late or not detailed enough for the project management. In addition a project requires a task-oriented approach instead of time orientation.

In the case of a grant-funded project the aspects to consider are as follows:

- the project sponsor can define specific roles and competencies for both project management team and staff,
- the applicant has to keep the limits of the proposal related to tasks, time and budget,
- the contract freezes the estimated indicators and requires exact compliance,
- additional data collection and processing, specified control of information and regular external reporting are obligations, not possibilities.

FACTORS OF ANALYSING THE CHARACTERISTICS OF GRANT-FUNDED PROJECTS

The project management literature defines phases of projects (see Verzuh 2011; Hobbs 2011; Görög 2003; Papp 2002). The PMBOK standard calls them management process groups: initiation, planning, action, monitoring and controlling, closing (PMI 2013). These process groups are general for any project, also a grant-funded projectcan use them. Of course individual adaptation is required but there are some basic differences between the grant-funded projects and the "classic" corporate-funded project. Using the logic of process groups there are five critical issues:

- conditions and planning,
- role and responsibility of stakeholders,
- organisational support,
- control and follow-up,
- handling modifications.

Conditions and planning

The main characteristic of a grant-funded project is that the winning applicant (project owner) is liable both professionally and financially to a third-party organisation. Of course, no one is obligated to submit a proposal but contracting means the ratification of the rules. Each project is a building stone of a wider programme. The programme aims to achieve economic, social, environmental or some other type of development, and the call for proposals is derived from these goals. The applicant has some freedom in defining the planned tasks, results and some indicators but these must be in harmony with the given goals. The success of the harmonisation is reviewed by the programme management (sponsor) during the execution and closing stages of the project; while the relationship of the project with the business goals is not involved in this control. In contrast, a corporate-driven and funded project has goals and conditions derived primarily from business goals and strategies (Ligetvári 2013). This difference can be observed between projects with different financing within the same organisation.

The limitations of agrant-funded project should not be necessarily judged negatively:

- the programmes aim to solve national or regional socio-economic problems, development actions within the programme may lead to multiplicative effects,
- establishment of the framework programme is based on an accurate situation analysis that cannot feasibly be carried out by the individual organisations.
- the guidelines of call for proposals specify the application of various methods and tools, e.g. organising teamwork, scheduling by Ganttdiagram, defining milestones and indicators, preparing documentation.

The limitations of agrant-funded project include the start time of the project, the action period, the cost level and structure and the project staff. These limitations have no regard for the corporate characteristics. If the organisation wants to get to the source of funding, these rules must be accepted. From another viewpoint a critical problem is that organisations see these sources as "free money" and commit to do anything during the planning phases without considering the strategic impacts. For instance, many EU projects promote the certified ISO 9001/ISO 14001 management systems, so there are notable extra points available in the evaluation system for certification, but the supported tasks do not cover the implementation and certification processes. Of course, the closing evaluation of the project will ask for the certification. Its absence can be sanctioned by payback of the source.

Another critical element is the planning of indicators. There are many types of indicators:

- input indicators describe the usable resources,
- output indicators describe the performance of processes, quantity of products and services reached,
- outcome indicators measure the broader results achieved through the provision of goods and services,
- effect indicators are features of grant-funded projects, these are related to the programme's objectives that cover the project.

In general, over-estimation may occur in order to develop a better picture for the funding decision. Over-

commitment is dangerous because after contracting, the responsibility for the indicators is full. It is quite easy to define input and output indicators; the outcomes and effects are beyond the scope of the project owner (applicant).Careful planning may pay off later.

The project owner is responsible for monitoring the indicators. Experience shows that data collection is impossible if the indicators are not in harmony with the corporate information system. If calculating the indicators needs more resources than the project tasks, this is a sig for the fact those were not defined in harmony with the business goals and information system.

Role and responsibility of the stakeholders

A project should serve the interests of many stakeholders: users of the products and services, the sponsor, project manager, project management team, operations management etc. The literature gives various typologies and names to the stakeholders. The PMBOK standard gives a general approach, including the concept of programmes and portfolios that cover the project (Figure 1).

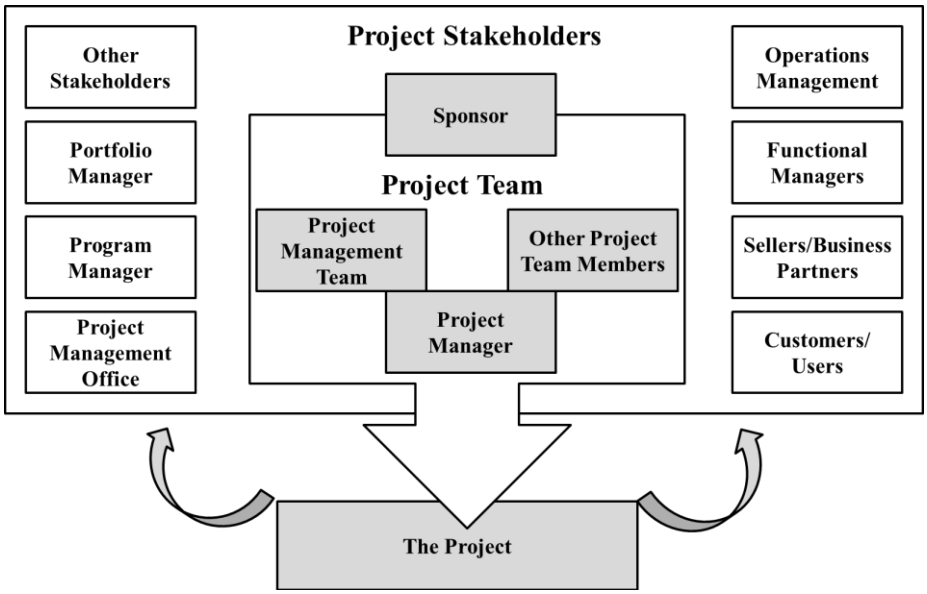

Figure 1. The relationship between stakeholders and the project (PMI 2013, p.31).

A corporate-funded project clearly defines the customers/users and derives the products and services from their needs. In case of a grant-funded project the users are assigned the acceptable goals and tasks, while analysing needs is superficial and secondary. Ultimately the objectives of the sponsor are determinative, and can overshadow the corporate ones.

The responsibility for the planning is also different for corporate and grant-funded projects. In the first case there is relatively high freedom in selecting and planning the tasks and the responsibility for each type of indicator is full. In the second case planning the tasks is more specified and the responsibility is limited to the output indicators.

The role of business partners is special. A subcontractor does not have an interest in performing the indicators. The responsibility of the external partner is limited to the contractual deadlines and outputs. It is difficult to enforce the concept and spirit of the projectgoals in these contracts. In addition, the subcontractor has no responsibility to the project sponsor; the project owner bears all of the responsibility.

Organisational support

Organisational support covers:

- assuring the necessary human resources,
- sustaining a dual structure of management.

Similarly to the case of corporate governance (see Szintay 2003) the roles and structural frames of project governance must be separated from project operative implementation. Personal overlap is allowed, but demarcation of roles is important. A call for proposals defines various requirements related to the project manager and the project management team (including financial officer, project administrator and experts):

- representation of a role or a status,
- qualifications of the position holder,
- competencies and experience of the position holder.

Employing a full-time project manager usually can be financed from the project but the newcomer position may lead to personal conflicts and the limited authority of the project manager results in redundancy in information flow. Assuring qualifications and experience may be problematic in a small-sized organisation.

The PMBOK standard expounds seven roles included in the project team:

- Project management staff: the members of the team who perform project management activities such as scheduling, budgeting, reporting and control, communications, risk management and administrative support. This role may be performed or supported by a project management office.

- Project staff: the members of the team who carry out the work of creating project deliverables.
- Supporting experts: supporting experts perform activities required to develop or execute the project management plan. These can include such roles as contracting, financial management, logistics, legal advice, safety, engineering, testing, or quality control. Depending on the size of the project and level of support required, supporting experts may be assigned to work full-time or may just participate on the team when their particular skills are required.
- User or Customer Representatives: members of the organisation who accept the deliverables or products of the project may be assigned to act as representatives or liaisons to ensure proper coordination, advise on requirements, or validate the acceptability of the project's result.
- Sellers: sellers, also called vendors, suppliers or contractors, are external companies that enter into a contractual agreement to provide components or services necessary for the project. The project team is often assigned the responsibility to oversee the performance and acceptance of sellers' deliverables or services. If the seller bears a large share of the risk for delivering the project's results, the representatives of the sellers may play a significant role on the project team.
- Business partner members: members of business partners' organisations may be assigned as members of the project team to ensure proper coordination.
- Business partners: business partners are also external companies but they have a special relationship with the enterprise, sometimes attained through a certification process. Business partners provide specialised expertise or fill a specified role, such as installation, customisation, training, or support. (PMI 2013)

The second issue of organisational support is establishing a dual management system. The project organisation gives the frames for coordinating the project-related tasks, authorities and responsibilities. Jarjabka (2009) highlights that project organisation has both advantages and risks. The achievable advantages are:

- a multidisciplinary approach can be enforced during the planning and the implementation,
- coordination is supported by the concept of being "in the same boat",
- focusses on the project problems and challenges,
- helps the clear division of authorities and responsibilities,
- authority for responding to the new challenges.

The main risks are as follows:

- collecting and focussing on "democratic" management techniques may slow down the decision-making process,
- the responsibility of the project organisation may lead to "collective escape from liability" of individuals,
- conflicts between the project work and normal operation,
- conflicts between the project and the operational authorities,
- external interests may influence and modify the available resources.

Establishing a separate project organisation means a high level of risks for an organisation that generally does not work in a project-oriented manner, because it has no experience and lacks the conforming cultural background. Collective escape from liability is enhanced in grant-funded projects. The team members and the staff will decrease their performance if they perceive that individual responsibility is not applicable in case of failure. External responsibility can be interpreted on organisational level. Internal accountability is not possible if a preliminary assignment of the indicators to the individual participants is missing.

There are several forms for handling the project coordination:

- functional form: project coordination is focused on the level of functional managers,
- matrix form: project coordination is not on the management level, project manager authority is various from coordinator/expediter (weak matrix) to considerable authority (strong matrix),
- projectised form: the primary division of labour is project based.

Table 1
Influence of organisational structures on project (PMI 2013, p. 22)

Project Characteristics / **Organisation Structure**		**Project Manager's Authority**	**Resource Availability**	**Who manages the project budget**	**Project Manager's Role**	**Project Management Administrative Staff**
Functional		Little or None	Little or None	Functional Manager	Part-time	Part-time
Matrix	**Weak Matrix**	Low	Low	Functional Manager	Part-time	Part-time
	Balanced Matrix	Low to Moderate	Low to Moderate	Mixed	Full-time	Part-time
	Strong Matrix	Moderate to High	Moderate to High	Project Manager	Full-time	Full-time
Projectised		High to Almost Total	High to Almost Total	Project Manager	Full-time	Full-time

In the case of a grant-funded project in practice there is a preference for the functional or weak matrix form in most organisations. These forms least disturb normal operation and also support the better acceptance of the project decisions because by are intertwined. An important advantage is that there are fewer conflicts; and the most important risk is the weakening of the project interests.

Follow-up and control

The role of control and follow-up of progress is versatile:

- overview the progress and the indicators,
- establish necessary modifications in order to achieve the planned results,
- complying with the schedule,
- verifying the effectiveness of resourceusage.

The frequency and the content of the follow-up activities generally depends on the information needs of the management or an external party. In a grant-funded project the "free money" characteristic represses the need for comprehensive internal control. The external monitoring and review is determinative instead of internal assessment. Of course, the regular and systematic reporting system grants the representation of follow-up activities but cannot guarantee the adequate depth. The external monitoring is a constructive cooperation of the parties because the successful project realisation is a common interest; however, it should be noted that it focusses on the documented project results (deliverables, products, services), the financial and the legal state and the programme's interest. There are no endeavours to review the relationship between the project's progress and organisational interest.

An important part of the follow-up process is monitoring the achievement of the indicators. Based on my experiences in preparing project reports there are some practical source of problems:

- Many organisations outsource bookkeeping and accounting, so detailed and current controlling information is strictly available. The project reporting system is separated, and the activities focus only on "fulfilling the reporting template". This shows that the organisation is not ready to handle the challenges of management system duality.
- The progress review statement is often reduced to two stages: "something wrong" and "doesn't matter". In the first case finding a person to blame will unnecessarily consume resources and the trust in project organisation/management becomes uncertain. The second case may give false feed back that everything is progressing in the best way. The result in both cases is ineffective resource usage.
- Obtaining the relevant information to demonstrate the progress (indicators) usually needs the work effort of stakeholders outside the project. The information is available with the active contribution of the top management, which may lead to personal and organisational conflicts. In addition, the process slows down and there is a risk of misunderstanding.
- Follow-up of indicators uses a quantitative approach. Thus, related to expert reports the number of pieces and pages can be planned but the usability is difficult to judge. Both lack of competencies and collective escape from liability lead to ineffectiveness.

Handling modifications

Beyond the results (indicators) the contract of agrant-funded project sets out wider-ranging organisational issues as well: deadlines, resources, budget, tasks, management, reporting, etc. Environmental changes may occur that require the rethinking of the project content. In the case of a corporate-funded project the changes can be derived from the need for effectiveness and the decision is on a corporate level. Modification is the decision of the top management (or an authorised department). However, possibilities for modifications of the plan and budget of a grant-funded project are limited and inelastic because of the differences in the interest of the sponsor and the project owner. Modifications are available after a slow approval process and contract modification. The main limitations:

- additional funding cannot be requested,
- the aim and goals of the programme covering the project must be kept in mind,
- basic indicators cannot be reduced or left out.

The difficulties of the modification process usually force organisations to comply with the original contractual terms and conditions even if they are meaningless for the project owner.

THE NEED FOR THE QUALITY APPROACH

The problems mentioned above are not intended by the stakeholders, those are rather the impact of the structure of different interests. The tools required by a call for proposals are partly quality management tools that help planning and the execution. The successful application of these tools needs a comprehensive quality management approach (Berényi 2013).

ISO 9000 defines quality as the degree to which a set of inherent characteristics fulfils requirements. Balogh (2010) extends the concept to projects as fulfilling requirements of the project stakeholders. This means that evaluation of the project quality requires the identification of stakeholders and their needs. Project quality management does not mean a parallel management system and organisation; it can be interpreted as the quality-oriented, conscious management of projects (Balogh 2010). This requires the integration of quality policy, necessary procedures, methods, tools and systems. Other essential criteria are a problem-solving approach and continuous improvement.

The literature consistently assigns three areas to project quality management. Table 2 summarises the concept of the PMBOK standard:

- planning quality,
- quality assurance,
- quality control.

Table 2
Project quality management overview (PMI 2013, p. 230)

	Plan Quality Management	**Perform Quality Assurance**	**Control Quality**
Inputs	• Project management plan • Stakeholder register • Risk register • Requirements documentation • Enterprise's environmental factors • Organisational process assets	• Quality management plan • Process improvement plan • Quality metrics • Quality control measurements • Project documents	• Project management plan • Quality metrics • Quality checklists • Work performance data • Approved change requests • Deliverables • Project documents • Organisational process assets
Tools & Techniques	• Cost-benefit analysis • Cost of quality • Seven basic quality tools • Benchmarking • Design of experiments • Statistical sampling • Additional quality planning tools • Meetings	• Quality management and control tools • Quality audits • Process analysis	• Seven basic quality tools • Statistical sampling • Inspection • Approved change requests review
Outputs	• Quality management plan • Process improvement plan • Quality metrics • Quality checklists • Project documents updates	• Change requests • Project management plan updates • Project documents updates • Organisational process assets updates	• Quality control measurements • Validated changes • Validated deliverables • Work performance information • Change requests • Project management plan updates • Project documents updates • Organisational process assets updates

Project management and quality management are hard to separate because both focus on the stakeholders, results, processes and resources. This is the reason that effective project quality management is primarily an approach and aset of related tools instead of a complex (e.g. ISO 9001:2008) system. The approach should be applied at three levels for a grant-funded project:

- project realisation (internal level),
- harmonising the project goals and the strategic goals (organisational level),
- contribution to the programme goals (external level).

A call for proposals and the guide defines the tools of internal and external level but there are few specifications related to organisational level. Without the commitment to quality and quality management on an organisational level (independently from the given project) this level will get poor attention.

Of course, implementing quality management tasks needs efforts and resources so it is necessary to plan them (later resource assignment is problematic). There are some special challenges to consider in the case of grant-funded projects:

- Determination of project relevance: analysis of hidden tasks and costs in order to be able to evaluate the contribution of the project to the corporate strategy. The "free money" is attractive but sometimes it is more effective to give it up. This needs a comprehensive approach and the co-ordination of top management because reaping the benefits and bearing the expenses are related to different stakeholders.
- Interpretation of indicators on corporate level: the structure and form of expectations are given, the project planning shall "translate" it for the organisation. Also the methods and sources of data collection must be considered.
- Scheduling and budgeting: risk analysis and demarcation of reserves make the project execution more elastic. The source of reserves may be hidden in the supported tasks but it should not prejudice the sponsor's interest. A well planned reserve allows project owners to extend the quantity or quality of results in planned progress.

CONCLUSION

Non-corporate funded projects provide an important resource for synchronising social and economic development. There are various project calls available. These allow organisations to establish projects to support the development of competitiveness adjusted to higher goals. In practice, there are some features that lead to need for special

project management approach:differences in internal and external interest and lack of project management competencies should be highlighted. It is difficult to harmonise the programme's expectations and those of the management system: the second one is usually overshadowed. There are project management standards that give a comprehensive system of management processes but their application may exceed the possibilities of most organisations. The proper adaptation of a quality management approach establishes effective co-ordination between the diverse set of interests. A grant-funded project prescribes the use of many management tools but these focus on the relationship of the project and the programme. Further consideration can increase effectiveness on the organisational level and on the programme level as well.

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Winners and Losers in the Liberalized Energy Retail Sector in Hungary: A Co-evolutionary Approach

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SUMMARY

This paper examines the recent history of the Hungarian energy trading market in a co-evolutionary framework. Hungary is characterized by a mixed ownership structure with mainly multinational incumbents in energy retail and distribution, while the wholesale is dominantly owned by state-owned companies. The legal framework also has dual characteristics, with free-market regulation for industrial consumers and a regulated price regime for households. Our research method follows a longitudinal approach from the period of market liberalization in 2008 until 2013. We identified strong relationship between the individual and sector performance of the trading companies and the current political ideology and institutional regime.

Keywords: Business/Government Interaction and Relations, Institutional trajectories, Market liberalization, Energy, Central and Eastern Europe

Journal of Economic Literature (JEL) codes: L98, L220.

INTRODUCTION

Companies are in permanent interaction with their environment on macro, meso (industrial) and micro levels.The two – possibly most influential – strategic management schools of the last decades, Michael Porter's *competitive strategy concept* (Porter, 1980) and the *resource based view* (RBV) of the firm (Barney &Arikan, 2001; Grant, 2008; Lockett et al., 2009; Priem & Butler, 2001),differ in the attention given to the main determinants of the firm performance. Porter follows the structure-conduct-performance model of industrial organization theory and identifies the main factors of the economic performance of the firm 'outside the gates', in its industrial structure.The RBVargues that the differences in performance tend tobe explained by the differences in resource endowments. It emphasizes the importance of unique, difficult-to-imitate resources in sustaining performance (Rumelt et al., 1991).Volberda &Lewin (2003) draw attentionto the different scopes of firm-level and meso-level theories in relation tostrategic *adaptation* and *selection*. The first group of theories (RBV, Behavioral Theory of the Firm, Learning Theories)are concerned with capabilities and strategies for adaptation and survival on the firm level and pay limited attention to population-level adaptation. Contrary, the meso-level theories (Transaction Cost Theory, IO, Institutional Theory, Evolutionary Economics) provide a theoretical foundation for linking firm adaptation to the macro institutional and competitive environment and ignore the firm-level micro adaptation.

The notion of *strategic fit* (Grant, 2008) creates a connection between the industrial competitive arena and the organisational factors. The successful strategy must be consistent with the firm's external environment and also with its internal environment (values, goals, resources and capabilities, structure and systems).Birkinshaw et al. (2004) distinguish the external and internal competitive forcesof the multinational company's (MNC)subsidiary performance. The MNC subsidiary simultaneously competesin the *external competitive arena,* which contains the customers, suppliers and competitors of the local marketplace and in the *internal competitive arena* for the customers and with the other competing entities that are part of the same MNC.

Although a large numberof books and articles have examined the interconnection between the internal and external forces in a competitive market situation, there is a limited focus on the role of active mutual interactions between institutional environment and company performance. However,firms in a highly institutionalized environmenttend to behave more actively in formulating the playing field, rather than simplypassively adaptto the changes in the external institutional environment.Firms compete not only within the marketplace, but also in the political arenabymanipulating the laws, regulations and governing institutions (Henisz &Zelner, 2005). Governments also tend to move from the role of passive guardians of the rules to more active participation in the market game (Child et al., 2012).

The theoretical concept of co-evolution focuses on the mutual influence and impacts of the organizational and environmental factors on corporate adaptation and selection mechanisms. The general meaning of the expression reflects

the situation when two or more populations can causally influence each other's evolution (Hannon et al., 2013). Corporate co-evolution is concerned with the ways in which firms and their environments develop interactively over time (Rodrigues and Child, 2003).

In the current paper we analyze the recent history of the Hungarian energy trading market in a co-evolutionary framework on the *macro, meso* and *micro* level and look for the recipe of business success over past years of turbulence. The Hungarian energy industry provides an opportune case to analyzethe interactions between firms and governmental and socialinstitutions. Firstly the privatization of the Hungarian energy sector in the middle of the 1990s radically changed the ownership structure of the industry. The former state-owned monolithic structure was divided into two subsystems. The integrated retail companies (including the distribution system operator (DSO) units and the household and industrial retail units) were privatized and with the exception of one company (the Budapest based natural gas retailer FŐGÁZ) transferred to major multinational energy companies like E.ON, EdF, RWE, ENI and GdF. From the time of privatization in the middle of the 1990s these local retailer and energy distributor firms operated as MNC subsidiaries. In contrast, state control was maintained over wholesale activity.The state owned company MVM had a privileged position to distribute power fromthe contracted state-owned and private power plants, through long term power-purchase agreements (PPAs). Secondly, Hungarian accession to the EU in 2004 required major changes in the legal framework. Hungary partially opened its closed electricity and natural gas trading market to medium and large industrial consumers in 2003. The share of the free market segment achieved more than 35% of the electricity market for 2006 as a result of the increased competition. The growing rivalry was partly due tothe competition between the incumbent MNEs for the industrial consumers and partly due to new entrants with strong regional industrial background, such asCEZ and MOL. Following EU legislation, Hungary broke down all legal barriers for free market trading from 2008 (from 2009in the case of natural gas) and legally opened also the household market segmenttothe free-market traders. Hungary also had to terminate the long term power purchase agreements (PPAs) between MVM and the major power plants, after the European Commission has requested the Hungarian state to end these contacts because they constituted unlawful and incompatible state aid to the power generators (EC, 2008). Commission declared that around two third of the electricity generated in Hungary was sold under PPAs and these contracts could restrict competition because they close off a significant part of the market from new entrants. The termination of the PPAs and the changes inthe institutional framework gave new opportunities forentry on the trading market for industrial companies and also from complementary industries, like the telecommunication sector. Last but not least, the case of the Hungarian energy trading sector also gives a great opportunity to analyze the impacts of the deteriorating macroeconomic conditions caused by the economic crisis from late 2008 on governmental policies, actions and institutional regime. This case gives a remarkable research field to illustrate how macroeconomic problems have influenced the political actors to change the dominant socioeconomic ideology and sector policies.

THE THEORETICAL FRAMEWORK OF CO-EVOLUTION

There are several studies on the theory of co-evolution. Volberda and Lewin (2003) introduced the notion to analyze the process of the firm-level adaptation and population level selection. They explain that co-evolutionary changes in micro and/or macro level are not simple outcomes of adaptation or environmental selection but rather the mixed result of managerial intentionality and environmental effects. Rodrigues and Child (2003) extended the scope of co-evolutionary perspective from the competitive industries to a highly institutionalized environment. They followed both a deductive and inductive method to formulate a relevant research framework for a public infrastructure organisation. The main focus of their model is the two-side, mutual impacts of performance, processes, objectives and structural forms onthe macro, meso and micro level.In the authors' interpretation, co-evolution is the *two-way interaction* between the meso (industrial) and micro (firm-level) factors. The performance of an industry has a strong impact on the performance of the individual firms. However, the company also can influence the sector conditions, mainly if it has a dominant market position or leading role in innovation. The sector performance also has impacts on the overall performance of the economy. There is a strong pressure on political actors to make changes in the political regime by modifying the dominant socioeconomic ideology and policies for underperforming macroeconomic indicators. The changes in the institutional regime in combination with exogenous factors like technology and new entrants have strong effects on sector business models. The modification in the business model hasa feedback on the sector performance through changing objectives and competitive and/or political sector dynamics. Moving to firm-level impacts, there is an evident two-way causal relationshipbetween organizational performance and sector performance. The organizational processes and objectives also interact with sector dynamics.Targets, norms and objectives typifying the sector have a co-evolutionary interaction with the firm-level objectives, just asthe sector dynamics interconnects with the organizational processes.

Foxon (2011) in his pentagonal model framework combines the socio-technical and techno-economic transition and the co-evolutionary approaches. The five key co-evolving systems in his framework are the *ecosystems, technologies, institutions, business strategies* and *user practices*. Hannon et al. (2013) partially modified the original model of Foxon,replacing the dimension of *business strategy* with the *business model* and moving it to the middle of the framework(Figure 1).

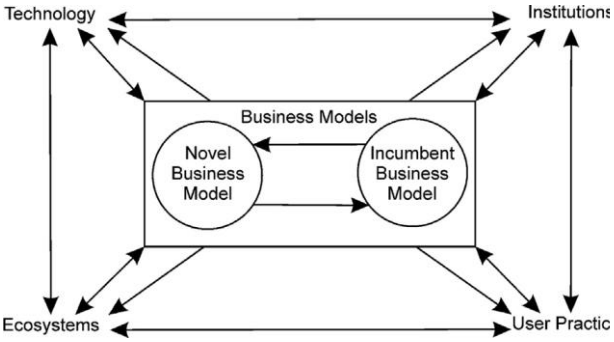

Figure 1. The co-evolutionary relationship between business models and the wider socio-technical system (Hannon et al., 2013)

Hannon et al. (2013) apply the business model canvas of Osterwalder &Pigneur (2010) to represent in detail the main characteristics of the sector concerned in their empirical study on the co-evolutionary interactions between the UK energy service companies and the traditional energy utilities. The authorsdistinguish the incumbent players' business models from the newcomers' models and identify that the incumbents typically wield more economic and political power comparedto the non-incumbent or niche populations of firms.

The current paper follows the methodology of Hannon et al. (2013) with minor changes in focus. Because of the limited empirical data on firm-level internal organizational characteristics, we concentrate on three elements of the business models – the customer segments, the key suppliers/partners and the cost structure – and give lessattention to the other elements of the canvas. We also give different emphasis tothe four external dimensions of the co-evolutionary framework. Although we present some illustrations on the interactions between the ecosystems, technology, user practices and business models, this study focusesmore on the two-way relationship between the institutions and business practices.The co-evolutionary framework of Rodrigues and Child (2003) and Child et al. (2012) promotesdeeper reflection on the political perspective of co-evolution.

METHODOLOGY AND SCOPE OF ANALYSIS

This paper follows the deductive-inductive approach of numerousarticles of co-evolutionary literature (Rodrigues and Child, 2003;Suhomlinova, 2006;Wilson &Hynes 2009; Child et al., 2012; Hannon et al., 2013). Our empirical research has a longitudinal focus. The study concentrates on the changes of the Hungarian energy retailsector from the time of liberalization of the whole market in 2008 until 2013. We used secondary sources such as company yearly reports, articles, press releases, legal documents and industrial surveys. Active personal involvement in several industrial organisations, industry events and conferences also helped us to collect background information from company managers, regulators and state officials through informal discussions.

The main purpose of the quantitative analysis was to better understand the differences in performance influenced by different business models and environmental factors of the focal firms.We collected company specific information and performance data of 22 major trading firms of the energysector from 2008 until 2013.The set of variables includes the industrial activity focus (electricity and/or natural gas), retail market segments served (universal services and/or free-market trading), ownership structure (foreign/local incumbent or foreign/local free-market trader), key operational revenue and cost figures (cost of goods sold, staff costs),and balance sheet items(fixed assets,invested capital, accounts payables, account receivables). We calculatedoperational efficiency indicators,companies' equity, short and long term debt to measure the companies' leverage and dividend and taxes paid, to measure the financial transfers between the firm and other key stakeholders, like the state and the shareholders. *Appendix 1* shows the extract of the dataset.

The firm level data were collectedfrom theofficial website of the Company Information and Electronic Registration Service Office of the Ministry of Justice, where all companies registered in Hungary compulsorily have to upload their yearly reports (profit and loss statements, balance sheet and notes).The financial figures of the 22 companies concerned properly represent the whole sector with the followingminor limitations:(1) There are several international energy trading companies which manage their Hungarian commercial operation through local representative offices without establishing affiliates under the Hungarian corporate law.The non-Hungarian registered firms have a limited licence forenergy trading operation without providing any retail services in the country.These companies do not publish their yearly report on the official Hungarian site. (2) The retail activity of the power plant companies also wasexcluded from the analysis. Although legally it is possible to sell their production directly to consumers without using intermediate traders, this is an uncommon activity. (3) The total energy trading volume in Hungary achieved 221 terawatt hours for electricity and 13.2 billion cubic meters in the natural gas sector based on 2013 figures of the Hungarian Energy and Public Utility Regulatory Authority. The total revenue of the electricity and gas trading sector was approximately 15.5 billion euro, while the revenue of the 22 firms of our dataset achieved 8.6 billion euro (55% of the total) in the same period. As we included all locally registered energy trading firms with yearly revenue over 3 million euro in the dataset, the difference can be explained mostly by the international trading activity of the non-Hungarian registered firms. Taking into consideration the impacts of the abovementioned limitations, wecan state with high confidence that our dataset represents the overwhelming majority of the Hungarian energy retail market.

We made some corrections of the raw financial data for better comparison. There are different organizational structures of the firms concerned. The majority of the companies operate the trading business unit in a legally separated affiliate, while several others combine the commercial activity with investment activities in an operating holding structure. The typical investment of the former incumbents is the direct ownership of the DSO's shares. The vast majority of the incumbent traders (ELMŰ-ÉMÁSZ, FŐGÁZ, GDF, TIGÁZ, EDF-DÉMÁSZ) also own the shares of their group's DSO, except E.ON, which made a full legal separation and organized all of its Hungarian subsidiaries into a strategic holding form. There are some other examples of a mixed activity profile,when free-market traders own shares in production units (ALTEO, Greenergy). To ensure the comparability of the commercial activities of our sample, we corrected the balance sheets and profit and

loss (P&L) statements of the firms by deducting the book value of the non-trading investments from the non-current assets and deducting the same amount from the capital reserves on the liabilities side. We deducted the financial income (dividends) from the owned DSOs or production units from the raw P&L figures. We used the modifiedfixed assets, equity and financial income figures in our reports.Appendix 2demonstratesthe statistical relationship between the main variables involved in the analysis, and presents the bivariate correlations and reliability coefficients.

THE RESULTS OF THE QUANTITATIVE ANALYSIS: IMPACTS OF THE CHANGING ENVIRONMENT ON THE ECONOMIC PERFORMANCE OF THE SECTOR FIRMS

The firms' economic performance figures reflect the complex interactions between the factors of the co-evolutionary framework.Table 1presents the financial indicators of the sector firms for the last four years of operation. The table shows the average equity, earnings,taxes and dividends figures of the four main clustersof the energy trading firms we have identified:(1) domestic incumbents, (2) domestic new entrants, (3) foreign incumbents and (4) foreign new entrants. The two companies in the domestic incumbent group (Group1) were fully or partially under state (MVM) or municipality (FŐGÁZ) control over the whole research period. Due to the changing political climate there was significant improvement in the financial performance of the state-controlled firms against that of the incumbent MNEs in 2012. This was the year when the *rules of the game* radically changed and the government began to execute its new policy on household energy price reduction and began to increasedirect ownership in the retail sector. The overall operational earnings of the incumbent MNEs radically decreased from the level of 2 billion HUF in 2011 to -37 billion in 2012. In contrast,the state controlled firms, mainly MVM, increased their profit from 21 to 39 billion in the same period.

Table 1
Key financial figures of the domestic and foreign-owned energy trading companies

all data in million HUF	Group*;**	2010	2011	2012	2013
Average level of corrected equity	1	16 927	16 884	25 926	16 874
	2	559	1 113	618	1 047
	3	7 406	15 770	4 766	-627
	4	319	462	317	-1 328
Average level of earnings before interest and taxes(EBIT)	1	9 524	10 843	19 617	679
	2	719	1 132	2 299	431
	3	2 432	-226	-5 304	-2 252
	4	1 926	1 269	866	-698
Average level of corporate tax	1	3 001	2 070	4 280	1 181
	2	235	113	231	251
	3	719	275	187	443
	4	34	56	28	36
Average level of dividend paid	1	10 172	10 971	14 950	855
	2	813	1 394	7 606	252
	3	4 755	7 107	3 578	10 490
	4	45	177	126	8

* Group1 = domestic incumbents; Group2 = domestic new entrants; Group3 = foreign incumbents; Group4 = foreign new entrants

** Number of firms in groups: In 2010 Group1 n=2, Group2 n=6; Group3 n=7; Group4 n=2. From 2011 Group1 n=2, Group2 n=8; Group3 n=7; Group4 n=5.

We can observe similar changes in the free-market segment between the local and foreign entities. The local companies were able to increase their average profit while the foreign-based traders were faced with decreasing profitability. The changes in the free-market segment are mainly attributable to the success of a newly founded company, MET. Althoughofficially this company has foreign ultimate owners, we reclassified it as a locally-controlled firms. The majority of the shares of the MET's Swiss based mother-company are owned by several offshore firms, while 40% of the shares are controlled by the Hungarian oil and gas giant MOL. The main factor behind the success of MET can be explained by an exclusive bilateral contract signed with MVM without public tender about importing natural gas on the Austrian-Hungarian interconnecting pipelineby transferring the special import capacity right of MVM to MET. While MET achieved only 44 billion revenue in 2010, the company realized 280 billion in 2012 and paid 60 billion in dividends to its owners, 2.5

times more than the overall dividends paid by the whole group of foreign incumbents in the same year.

Whereas the governmental 'restructuring'of the playing field resultedin positive income for the 'preferred entities' and simultaneously served well the changing socio-economic environment, there are several questionmarks regardingthe long term sustainability of the new system. Figure *2* and Figure *3*illustrate the dynamic changes in profit and equity position of the sector companies. It is easy to observe that 2012 was the year of the great successes of the domestic players. The three major local players (MVM, FŐGÁZ and MET) realized significantly higher profits than in the previous period. In contrast, all incumbent multinationals – E.ON, EDF, GDF,RWE GROUP (ELMŰ, ÉMÁSZ and MÁSZ), and TIGÁZ (ENI) – faced decreasing profitability and/or worsening equity positions.

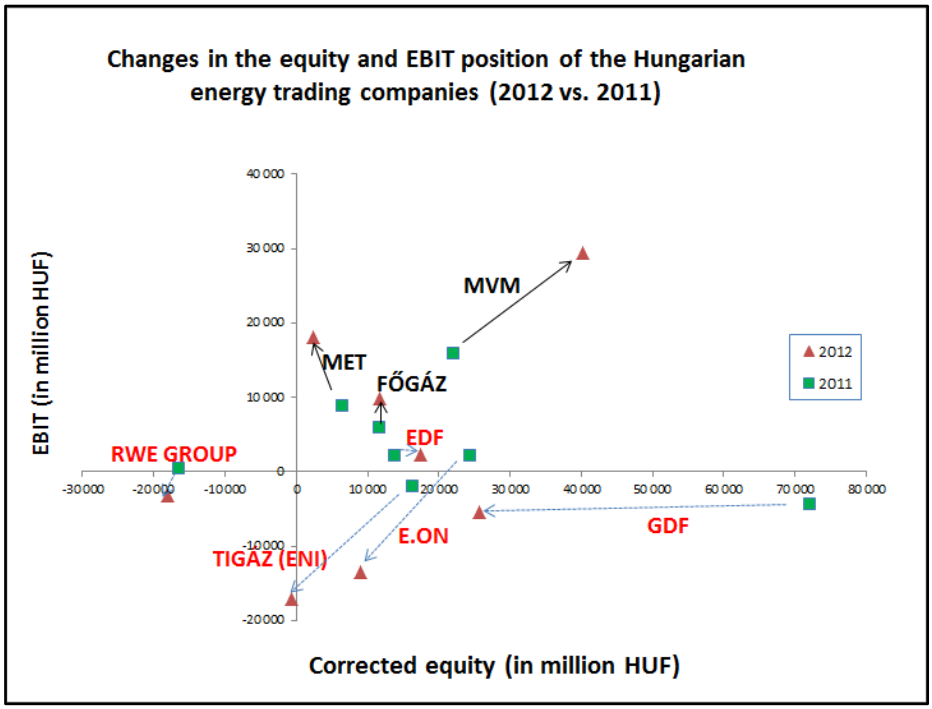

Figure 2. Changes in profitability and equity position of the Hungarian energy trading companies from 2011 to 2012

We can observe significant changes inprofit and equity figures in 2013 compared to 2012. However, it seemsfrom the figures shown in Figure 3 that after the shocking year of 2012 the incumbent MNEs adapted to the new environmental challenges. E.ON and GDF significantly increased the level of their operating profit, while EDF and RWE increased the level of dividend paid while maintaining their profitability.

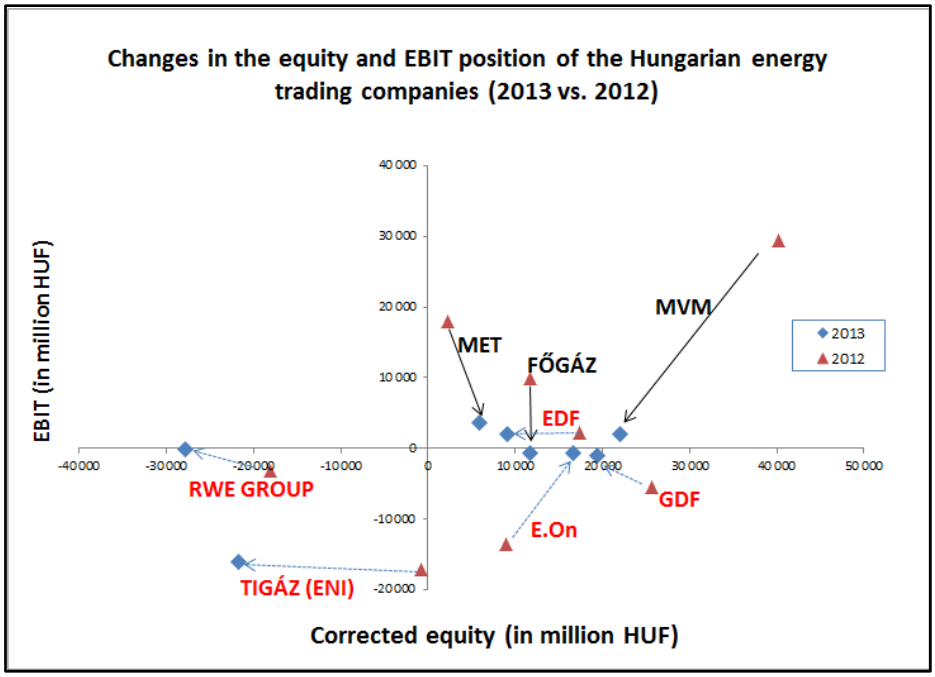

Figure 3. Changes in profitability and equity position of the Hungarian energy trading companies from 2012 to 2013

The statistical analysis of various variables (see the detailed correlations in Appendix 2) also supports our observations of the changes in firm-level performance and strategic behaviour. While there is a relatively strong significant positive correlation between the *after tax profit* of the firms and the *domestic control* dummy variable in 2011 (r=0.431) and 2012 (r=0.457), the strengths of correlation weakened for 2013 to a moderate level (r=0.247). In contrast, the negative correlation between the *after tax profit* and the dummy variable of *universal services* weakened from a strong and significant relationship in 2011 (r=-0.415) and 2012 (r=-0.454) to an insignificant moderate negative level in 2013 (r=-0.247). It is also interesting to observe the relationship between the profits of different years. Generally there is very strong significant positive correlation between the *after tax profits* of the upcoming years (r=0.834 between 2010 and 2009). The strength of this relationship continuously weakened in the observed period (r=0.702 between 2012 and 2011 and r=0.562 between 2013 and 2012), which indicates that the past period profitability has a relatively low influence on the upcoming economic performance of the firms. The correlation between the *dividends* of different years and the *universal service* variable also refers to the changing behaviour of the MNE subsidiaries. The strong significant correlation in 2013 (r=0.549) can be explained by the increased dividend paid by various foreign-controlled enterprises, like EDF and ELMŰ-ÉMÁSZ.

The economic performance results of the MNE subsidiaries in 2013 indicate that these firms adapted effectively to the radically changing environment. They executed several organizational changes to increase their operational performance and made a strategic shift to concentrate more on the unregulated free-market activities and decrease their dependency on the regulated household segment.

FORMS OF CO-EVOLUTION IN THE HUNGARIAN ENERGY TRADING SECTOR

The following sectionillustrates the co-evolving interconnections between the elements of the theoretical approach. It highlights the main changes of the regulatory regime on the legal conditions of the energy trading and their impacts on adaptation and selection of sector firms.

The evolution of free-market trading from the partial market opening in 2003

Although the time horizon of the quantitative analysis in this paper starts in 2009, in the energy trading sector the beginning of the institutional changes dates back to 2003. Hungary partially opened the energy retailmarket that time, as a requirement of the EU accession negotiations. The change of the regulatory framework had an immediate strong impact on the sector business models. The first wave of new entrants to the market reacted rapidlyto the new business opportunities between 2002 and 2006. Some leading regional energy players which formerly had not participated in the privatization of the Hungarian energy businesses in the mid-1990s– like the Czech CEZ and Austrian ÖMV – establishedlocal subsidiaries to serve their international industrial consumers. Local newcomers – E-OS, JAS, IFC (formerly named Optenergy) –used their local network capabilities and focused on niche market segmentswith the strategic concept to servethe domestically-owned SMEs. These two strategic groups of new entrant companies significantly increased the level of competition in the industrial consumer segment and influenced the business models of the incumbent players. Whereas thehousehold retail segment was still a protected market for the incumbents, they also perceived the need to enhance their capabilities because of the decreasing revenues on the

freemarket. E.ON, GDF, ELMŰ and ÉMÁSZ reacted to the challenges with organizational transformations. E.ON reorganized the governing structure of the whole local operations byformulating a strategic holding centre and separateditsretailactivities from all other business units. ELMŰ and ÉMÁSZ,both majority-owned by the German RWE Group,jointly established a new free-market retailer subsidiary company (MÁSZ) which focused solely on the industrial consumer segment while the two incumbents still managed the retail services for the non-market entities (households, institutions) through the traditional way.

Effects of the full market liberalization – years of increasing competition

EU integration abolished the dual market system,as Hungary was obliged to adoptnew laws and regulations for the electricity and natural gas sectors in 2007 and 2008. Whereas theoretically the new legislative framework broke down the entry barriers on the formerly protected market segments, the household retail segment of the market remained under strong state pressure. The new model defined the notion of *universal services* in harmony with the third energy package of the EU. Generally the concept of universal service is to ensure eligibility, transparency and non-discriminatory prices to households and small enterprises and to provide adequate safeguards to protect vulnerable customers (EC2009a, 2009b). Despite the fact that the regulated energy prices for households are not necessarily part of the protection mechanisms of the vulnerable customers, the vast majority of Member States (includingHungary) still apply regulated price regimes (EC 2014, CEER 2012)forthe universal energy services. The Hungarian model of regulationwas relatively soft in the early yearsof the new regime,from 2008 until 2011. The ministerial decree on universal services regulated only the commercial margin of the service providers, while the firms could manage their purchasing portfolio on their own risks and interests. This type of *margin regulation* opened a place for new entrants to the household segment. Magyar Telekom, the local subsidiary of Deutsche Telecom,took advantage of the opportunity and entered the household and SME energy retail market in 2011.Telekom's main motivation behind the diversification was to fortify itsleading role in household telecommunication services.All local mobile operators (Telekom, Telenor and Vodafone) offer bundled services for consumers with packaging ofvoice and data services in a single offer. It was a logical continuation of the bundling strategic concept to integrate new non-core services into the 'bundled services for households' model, like retailenergy. The pillars of the market-leading telecommunication company's entry strategy were the strategic resources and capabilities ofthe over 4 million customer basis and the experience in marketing and operations of mass market services. Telekom achieved close to a 5% market share for 2013, two years after entering the household energy retail sector. However the growing revenues were not reflected in the operating profit figures. Telekom's entrance and the changing legal framework posed a challenge to the incumbents.The RWE Group member companies ELMŰ and ÉMÁSZ faced the challengesproactively and changed their conservative approacheson household services. They introduced a new geo-tariff for heat pump users to present their commitment tothe ecological impacts of energy consumption. They also elaborated a free-market trading concept of anInternet-based commercial service platform for households and implemented this new trading system in 2013.

From market coordination to centralized bureaucracy

The results of the parliamentary elections in 2010 significantly changed the dominant view of the political actors on the preferred development paths of the public utility services. The dominant ideology of *liberalization* and *competition* of the former social-liberal majority were replaced with the ideology of *patriotism* and *centralized control*. The new National Energy Strategy (Parliament of Hungary, 2011) declared the state's strong commitment to increasing its influence in the electricity and natural gas sector through increasingdirect ownershipbytaking back various formerly privatized segments of the sector. MVM, the single state-owned entity on the market, had a key role in execution. MVM entered the natural gas business bybuying the wholesale unit and commercial storage facilities from E.ON as a first step in early 2013. Simultaneously the Parliament adopted a change in law which declared that the ownership and operation of security gas storages facilities is an exclusive right of state-owned entities. MVM continued its acquisition strategy after securing the gas wholesale position through the modified legal environment. Formerly the company had had no direct interests either in the electricity or in the natural gas household retail segment. MVM Partner, the group's retailer,similarly to the non-incumbent newcomers focused only on the more profitable free-market segment after the 2003 partial sector liberalization. To execute the new strategy influenced by the changing political environment, MVM bought the 49% minority stake of RWE Group in FŐGÁZ, the Budapest-based incumbenthousehold gas retailer in 2013.The company also signed a non-binding letter of intent with E.ON in 2014 on the acquisition of E.ON's interests in the household retail service field. The institutional regime supported the expansion of the state-owned market player with several changes in the legislative framework of household services and through discriminatory application of the legal rules. The Parliament modified the price regulation rules of the universal services from 2011 byreplacing the former margin regulation to a *selling price regulation* (Vince, 2012). The new full-price control did not leave an opportunity for the universal service providers to share their procurement risks with their customers. Although the incumbent retailers suffered great losses on the universal services, the official communication emphasized that the incumbents would able to balance their financial income through the profitable operations of the DSOs and the free-market retail units. A 2012 report prepared by the responsible ministry(Index, 2013) statedthat the three MNEs (E.ON, RWE and EDF) involvedin electricity universal services had20 billion forint yearly overall lossesin 2011 on universal services, while they achieved 51 billion overall profits on the distribution and free-market services the same period.The ministry commented that the MNEs are able to achieve a fair overall profit rate on the corporate level. In fact, the loss reduction of the household services through cross-financing createdsignificant and growing constraints from the aspect of market competition. The strong competition on the free-market segment limited the opportunity to mitigate the losses of the incumbent MNEs on the household retail services through price increases on the freemarket.

The state authorities also increased the pressure on the MNEs with resolutions, penalties and fines from various authorities. Although the firms several times won legal proceedingsagainst the authorities (for example E.ON and FŐGÁZ against the Energy Authority in 2013 in a case on the 2012 energy tariff regulation, ELMŰ and ÉMÁSZ against the Authority of Consumer Protection in 2014 in a case on the printed form of the energy bills) the political message seemed clear. All of the MNEs had to realizethat only a few rational strategic opportunities were still available for them: (1) to decrease their exposure to the regulated services through selling or offering their investments to the state entities,(2) optimizing the cash flows of owners (FCFE) by cost reduction, postponement of investments and increasing the level of dividends,or (3) leaving the Hungarian retail subsidiary in a permanent underperforming financial situation.

The transactions between E.ON and MVM on the natural gas wholesale unit and storage facilities and the transaction between RWE and MVM on the minority stake in FŐGÁZ illustrate well the first potential path of MNE's adaptation. The second potential way,optimization of the equity holders' cash flow, is well-characterized in the increased operational efficiency (E.ON, ELMŰ, GDF) and/or the significantly increased dividends (EDF, ELMŰ, ÉMÁSZ) of MNEs in 2013.The third adaptation strategy is wellcharacterized by TIGÁZ.

Although themajority of the MNEs' short-term adaptation strategies seem successful, several issues still remain open. If they want to decrease their exposure to the state and plan to leave the regulated market, they need a buyer. The single potential buyer seems to be the state-owned MVM, as there is a very low probability that any private entities plans to enter the unpredictable regulated retail segment. However the capital position of MVM seems insufficient to manage more acquisitions. The negative impacts of the below-cost regulated prices on the recent profitability of the firm can be seen. The 2013 after-tax profit of trading activity decreased close to the zero level from the level of 23 billion HUF in 2012.

Because of the low interest of potential buyers to invest in Hungarian regulated retail businesses, the MNEs have to look for alternative and more proactive strategies to survive. They can use their bargaining power more actively, also on the firm and on a state-to-state level. The changes in the MNEs' organisational structure with separation of the regulated retail business lines can help to mitigate the risks of state influence on the remaining part of their activities.Last but not least, they also can innovate. E.ON and RWE came to the market in 2014 with a new concept of building and operating small distributed solarpanels for households and converting the traditional retailer-consumer model to a 'prosumer' concept. These firms reshape their business models through learning from the industrial technical changes and using their experiences from the German market. It seems that the permanent changes of the sector will continue also in the upcoming years.

CONCLUSIONS

The aim of this paper was much more to explore two-way interactions in a co-evolutionary framework on micro, sector (meso) and macro levels and to present theirimpacts on firms' performance rather than to formulate hypotheses on the causality of the factors.The Hungarian energy trading sector gives an excellent research field to apply the theory of co-evolution in a highly institutionalized environment because of the significant institutional constraints, the strong political influence on the sector and the mixed ownership structure of the trading firms.We identified various examples of the mutual impacts of the firms and their institutional environment. We found, following the theoretical statements of Child et al. (2012), that in a highly institutionalized business system the co-evolution is the outcome of the relational processes between the relevant actors, including politicians, regulators, firms and other stakeholders.The last decade of the Hungarian energy retail sector illustrates well the permanent change in the relationships between the relevant interest groups.The relationship between the MNEs and the political actors was modified several times during the last decades. The privatization in the mid-1990's guaranteed a stable institutional framework for the MNEs. The EU accession had significant impacts on the institutional environment and the business strategies of the incumbent market players because of the partial market opening in 2003 and the full liberalization of the market in 2008.MNEs had to react to the increased level of competition and develop more consumer-oriented services and business models. They also hadto modify their business strategies and their relationships to other groups of stakeholders after the parliamentary election in 2010, when the dominant ideology of liberalizationand competition has been replaced with the ideology of patriotism and centralized control.

We can state with high probability that the upcoming years will give an excellent research opportunity to follow the evolution of the sector and the firm-level adaptation in a longer historical perspective. There are several opportunities for the further developmentofour research method and analytical framework. We gave relatively low attention to the *intra-firm level* factors of the co-evolutionary framework, such as the processes of development of capabilities and the ways of organizational transformation. We also applied in a simplified way the suggested method of Hannon et al. on the identification of the business models. Regardless of the limitations, we hope that our remarks could make a valuable contribution to the co-evolutionary literature.

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Appendix 1 – Main characteristics of the firms in dataset

Name of Company	**Main Ultimate Shareholder**	**Country of origin**	**Main owner's stake of shares**	**Date of foundation***	**Short Name in Dataset**	**Product focus**	**DSO in the same group**	**Universal services**	**HU power plants in group**	**Revenue in 2013****	**Base equity in 2013**	**Corrected equity in 2013**	**EBIT 2013**	**EBIT/Sales 2013**	**Corrected Profit after Tax in 2013**	**PAT/Sales 2013**
Alteo Nyrt.	Wallis Asset Management Zrt.	HUN	94,9%	2008	ALTEO	electricity			Y	2 256	1 593	-926	-129	-5,72%	-103	-4,55%
Budapesti Energiakereskedő Kft.	B.E.K. GROUP s.r.o.	SVK	100,0%	2003	BEK	electricity				1 952	98	98	-114	-5,83%	38	1,92%
CEZ Magyarország Kft.	CEZ a.s.	CZE	100,0%	2005	CEZ	electricity				17 557	106	106	-327	-1,87%	-349	-1,99%
CYEB	ArtProgram Srl.	ROU	100,0%	2010	CYEB	combined				5 218	96	96	47	0,90%	38	0,72%
E.ON Energiaszolgáltató Kft.	E.on Energie AG.	GER	100,0%	1991 (2007)	EON	combined	Y	Y	Y	485 150	16 609	16 609	-678	-0,14%	-1 610	-0,33%
Econgas	EconGas GmbH. (ÖMV)	AUT	100,0%	2007	ECONGAS	gas				23 578	257	257	20	0,08%	5	0,02%
EDF-DÉMÁSZ Zrt.	EDF International S.A.S.	FRA	100,0%	1991	EDF	electricity	Y	Y	Y	123 628	122 016	9 147	2 056	1,66%	1 912	1,55%
ELMŰ Nyrt.	RWE Energy Beteiligungs	GER	55,3%	1991	ELMU	electricity	Y	Y	Y	191 597	201 090	-24 990	-2 309	-1,21%	-3 416	-1,78%
ÉMÁSZ Nyrt.	RWE Energy Beteiligungs	GER	54,3%	1991	EMASZ	electricity	Y	Y	Y	74 811	83 930	-3 312	-1 957	-2,62%	-2 385	-3,19%
E-OS Zrt. & E-OS Gáz Kft.	Közgép Zrt.	HUN	100,0%	2006 / 2011	EOS	combined				6 794	227	227	29	0,43%	46	0,68%
FŐGÁZ Zrt.	Municipality of Budapest***	HUN	50,0%	1993	FOGAZ	gas	Y	Y		218 803	34 885	11 649	-611	-0,28%	-905	-0,41%
GDF-SUEZ Energia Magyarország Zrt.	GDF International S.A.S.	FRA	100,0%	1993 (2006)	GDF	gas	Y	Y	Y	184 260	19 487	19 365	-998	-0,54%	-25	-0,01%

* Date of foundation generally shows the founding date of the unit concerned. In several cases there were significant organizational changes in the holding structures. The date between brackets reflects the date of the reorganisation and establishment of independent trading unit. In the case of Magyar Telekom, the date reflects the beginning of itsenergy trading activities.

** all financial figures are in million Hungarian forints.

*** The Municipality of Budapest sold itsstake to Hungarian Asset Management Zrt. in July 2014

Name of Company	**Main Ultimate Shareholder**	**Country of origin**	**Main owner's stake of shares**	**Date of foundation***	**Short Name in Dataset**	**Product focus**	**DSO in the same group**	**Universal services**	**HU power plants in group**	**Revenue in 2013****	**Base equity in 2013**	**Corrected equity in 2013**	**EBIT 2013**	**EBIT/Sales 2013**	**Corrected Profit after Tax in 2013**	**PAT/Sales 2013**
Greenergy Trade Kft.	Greenergy Holdings LLC	USA	100,0%	2009	GREENENERGY	electricity			Y	1 901	67	67	13	0,71%	3	0,18%
JAS Budapest Zrt.	Hungarian private individuals	HUN	100,0%	2002	JAS	combined				2 256	1 593	1 593	-129	-5,72%	55	2,43%
Magyar Telekom Nyrt.	Deutsche Telekom AG	GER	59,2%	(2011)	MTEL	combined				48 000	-7 168	-7 168	-4 153	-8,65%	-4 244	-8,84%
Magyar Áramszolgáltató Kft.	RWE Energy Beteiligungs	GER	54,3%	2002	MASZ	electricity	Y		Y	144 841	450	450	4 200	2,90%	1 836	1,27%
MET Magyarország(MOL) Energiakereskedő Zrt.	offshore companies	(CHE)	60,0%	2009	MET	gas				232 489	5 873	5 873	3 590	1,54%	-1 723	-0,74%
MVM Partner Zrt. & MVM Trade Zrt.	Hungarian State	HUN	99,9%	1991 (2002/2005)	MVM	combined			Y	609 407	22 099	22 099	1 968	0,32%	524	0,09%
Nordest Energy Kft.	Hungarian private individuals	HUN	100,0%	2010	NORDEST	combined				2 169	-2	-2	-40	-1,86%	-18	-0,83%
IFC Energy (Optenergy) Kft.	Hungarian private individuals	HUN	100,0%	2006	IFC	combined				27 622	1 325	1 325	269	0,97%	91	0,33%
TIGÁZ Zrt.	ENI SPA.	ITA	100,0%	1994	TIGAZ	gas	Y	Y		240 413	26 087	-21 658	-16 080	-6,69%	-20 774	-8,64%
VPP Erőmű	Hungarian private individuals	HUN	100,0%	2011	VPP	electricity			Y	11 865	186	186	-28	-0,23%	-42	-0,35%

* Date of foundation generally shows the founding date of the unit concerned. In several cases there were significant organizational changes in the holding structures. The date between brackets reflects the date of the reorganisation and establishment of independent trading unit. In the case of Magyar Telekom, the date reflects the beginning of itsenergy trading activities.

** all financial figures are in million Hungarian forints.

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Appendix 2 – Correlations and reliability coefficients

		DIV_13	DIV_12	DIV_11	DIV_10	DIV_09	SIZE_13	SIZE_12	SIZE_11	SIZE_10	PAT_13	PAT_12	PAT_11	PAT_10	PAT_09	DOM_CONTROL	UNIV	PRODUCTION
DIV_12	Pearson Correlation	,151																
	Sig. (2-tailed)	,503																
	N	22																
DIV_11	Pearson Correlation	,279	,402															
	Sig. (2-tailed)	,221	,071															
	N	21	21															
DIV_10	Pearson Correlation	,553*	,295	,435														
	Sig. (2-tailed)	,014	,221	,063														
	N	19	19	19														
DIV_09	Pearson Correlation	,502*	,227	,416	**,903****													
	Sig. (2-tailed)	,034	,364	,086	,000													
	N	18	18	18	18													
SIZE_13	Pearson Correlation	,309	,417	,602**	,533*	,479*												
	Sig. (2-tailed)	,162	,054	,004	,019	,044												
	N	22	22	21	19	18												
SIZE_12	Pearson Correlation	,285	**,429***	**,623****	,506*	,447	**,984****											
	Sig. (2-tailed)	,199	,046	,003	,027	,063	,000											
	N	22	22	21	19	18	22											
SIZE_11	Pearson Correlation	,333	,391	**,605****	**,524***	,461	,899**	**,943****										
	Sig. (2-tailed)	,130	,072	,004	,021	,054	,000	,000										
	N	22	22	21	19	18	22	22										
SIZE_10	Pearson Correlation	,249	,179	,435	,420	,460	,678**	,745**	**,826****									
	Sig. (2-tailed)	,320	,478	,071	,082	,063	,002	,000	,000									
	N	18	18	18	18	17	18	18	18									
PAT_13	*Pearson Correlation*	,016	,023	,132	,129	,075	-,283	-,282	-,259	-,209								
	Sig. (2-tailed)	,945	,919	,568	,599	,767	,202	,204	,244	,405								
	N	22	22	21	19	18	22	22	22	18								
PAT_12	*Pearson Correlation*	-,049	,520*	,364	,398	,413	,023	,025	,000	-,054	**,562****							
	Sig. (2-tailed)	,828	,013	,104	,092	,089	,919	,911	,999	,832	,007							
	N	22	22	21	19	18	22	22	22	18	22							
PAT_11	*Pearson Correlation*	-,132	,418	-,080	,406	,369	,118	,115	,081	,010	,413	**,702****						
	Sig. (2-tailed)	,559	,053	,730	,085	,132	,601	,610	,720	,968	,056	,000						
	N	22	22	21	19	18	22	22	22	18	22	22						
PAT_10	*Pearson Correlation*	-,356	,267	,092	,390	,372	,336	,334	,298	,215	,181	,554*	**,778****					
	Sig. (2-tailed)	,147	,284	,717	,110	,141	,173	,176	,229	,393	,472	,017	,000					
	N	18	18	18	18	17	18	18	18	18	18	18	18					
PAT_09	*Pearson Correlation*	-,110	,262	,166	**,549***	**,627****	,179	,169	,143	,120	,231	,786**	,764**	**,834****				
	Sig. (2-tailed)	,676	,311	,525	,022	,007	,492	,518	,583	,645	,372	,000	,000	,000				
	N	17	17	17	17	17	17	17	17	17	17	17	17	17				
DOM_CONTROL	*Pearson Correlation*	-,334	,262	-,057	,012	-,065	-,316	-,295	-,316	-,082	,247	**,457***	**,431***	,225	,305			
	Sig. (2-tailed)	,128	,239	,805	,960	,798	,152	,183	,152	,747	,267	,032	,045	,369	,234			
	N	22	22	21	19	18	22	22	22	18	22	22	22	18	17			
UNIV	*Pearson Correlation*	**,549****	-,044	**,461***	,241	,163	**,618****	**,624****	**,651****	**,512***	-,379	**-,454***	-,415	-,349	-,436	**-,428***		
	Sig. (2-tailed)	,008	,845	,036	,319	,517	,002	,002	,001	,030	,082	,034	,055	,155	,080	,047		
	N	22	22	21	19	18	22	22	22	18	22	22	22	18	17	22		
PRODUCTION	*Pearson Correlation*	**,457***	,002	,076	**,490***	**,546***	,219	,211	,156	,334	,195	,065	,248	,295	,294	-,203	,226		
	Sig. (2-tailed)	,032	,993	,743	,033	,019	,328	,345	,487	,176	,383	,775	,267	,234	,252	,366	,313		
	N	22	22	21	19	18	22	22	22	18	22	22	22	18	17	22	22	
DSO_in_GROUP	*Pearson Correlation*	**,514***	-,073	**,435***	,413	,265	**,672****	**,669****	**,699****	**,563***	-,298	**-,426***	-,338	-,119	-,302	**-,500***	**,904****	,332
	Sig. (2-tailed)	,015	,746	,049	,079	,288	,001	,001	,000	,015	,177	,048	,124	,638	,239	,018	,000	,131
	N	22	22	21	19	18	22	22	22	18	22	22	22	18	17	22	22	22

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Comments to the set of variables:

DIV_n means the dividend paid in the year n;
SIZE_n measured as the natural log of revenue of year n;
PAT_n means the profit after tax of year n; DOM_CONTROL (dummy)=1 if the company controlled by local ultimate owners;
UNIV (dummy)=1 in case of universal service activities;
PRODUCTION (dummy)=1 in case of ownership production entities (power plants);
DSO_IN_GROUP (dummy)=1 if the firm belongs to a group which also has ownership in a DSO.

Relations between R&D Activities and Tax Allowances in Hungarian Car Trade Companies

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SUMMARY

The research, development and innovation (R&D&I) activities of enterprises are highly influenced by the socio-economic environment. The product, process, and organizational innovations of enterprises can be stimulated both by direct and indirect tools. In this study, we listed all the R&D related tax allowances that are part of the corporate income tax regulation. By using primary data (including all Hungarian business associations), we analyzed how the car trading companies could utilize the available tax allowances. Our results showed how effective these tax allowances were in stimulating research and development activities. In our study, our main focus was to identify the reason for the low number of innovation activities.

Key words: business enterprises; SMEs; innovation; R&D; tax allowance

Journal of Economic Literature (JEL) code: G38, L98, M21

INTRODUCTION

A short history of Hungarian car production

The first motor vehicles – which were three-wheelers and were made for the order of the Hungarian Post – were produced 17 November 1900. This date is considered as the start of the Hungarian automotive industry, although larger, industrial scale production started only four years later. By the time of the First World War 10 Hungarian car brands had been introduced. The domestic factories were diversified into two separate industries: the automotive factories for passenger vehicles and the wagon or truck factories. During the First World War, the automotive industry almost vegetated, an dare-boom started in the 1920s, when the production of some car models was started in an assembly line. During these years, the largest engineering companies involved in the production were the Hungarian MÁVAG (Hungarian State Iron and Steel Equipment Factory), and the Manfred Weiss Works. As a result of the global economic crisis in 1929, several factories were closed and people became unemployed, but at the end of the crisis the industry renewed itself. The Second World War almost eliminated the industry due to the high inflation in the country; the restoration went on only slowly and with difficulties. The birth of the vehicle program was in 1964, and in the 1970s bus manufacturing became preferred. While the commercial vehicle manufacturing gradually eroded, the car manufacturing industry began to develop. In that period modern work culture and new manufacturing techniques were introduced, the automatic program control and robotics appeared, all of which have contributed to the strengthening of the economy and help the country to catch up with Western Europe (Balint 2009).

The car industry of the EU

The importance of the automotive industry both at European Union and national level is undisputedly an integral part of the economy. More than 260 million cars are on Europe's roads, with nearly 7% being new vehicles under one year old. The role in employment is significant, because more than 12 million families depend on this industry for their livelihood. Of new cars, 30% are made in the EU (ACEA 2010).

The car industry, which was basically a manufacturing-based industry, has recently become a knowledge-based sector where the producers are spending €20 billion a year

for R&D activities, which makes the players of this industry the largest private investors in the EU. The car industry also plays an important role in security issues and sustaining mobility (ACEA 2010).

As the automotive industry plays a prominent role in both employment and exports, as well as in research, development and innovation, it tends to receive special attention and assistance from the different governments. "The European Union supports its car industry, by keeping the proportion of the community supply, environmental protection and quality characteristics of requiring tariff protection" (Antalóczy & Sass 2011, p 36.)

Proper regulation is an indispensable condition of the development and maintenance of industry. With more than 80 directives and 115 legislations, the car industry belongs to one of the most regulated sectors in the European Union (ACEA 2010).

The role of the car industry and car trade in Hungary

In Hungary, an increase of the demand for cars was first evident after 1956.

From the 1970s until the beginning of the 1990s the main feature of the Hungarian car market was the lack of supply. The customers could buy only cars made in the socialist countries, and sometimes the customers had to wait for their cars for several years. After the political and economic transition, the Western European market opened and became available for the Hungarian buyers. Thus, the supply of high quality and more expensive cars increased. By this time the demand had gradually decreased. As the first steps, in the beginning of the 1980s, some of the large companies were allowed to buy western cars. By 1989, the duties on cars had been reduced, which resulted in a boom in the trade of mainly used cars. Their price was acceptable and their quality exceeded the quality of new cars made in the socialist countries.

In 1989 the first representatives of the most important car manufacturing companies established dealerships in Hungary. The monopoly of Merkur, the state-owned car dealing company, was terminated. In this period, 30–40% of the cars were sold to individual customers; the greater share was represented by governmental contracts and the demand of large companies.

After the political and economic transition in the middle of the 1990s, Suzuki, Opel and Audi factories were established in Hungary, since then the largest share of the production represent (Kemenczei 2010).

In 1993, the sales tax for cars was introduced and the number of cars allowed to be imported per family was limited. In this year, 1 657 000 cars were registered in the Hungarian market. In 1994, the establishment of the different car dealerships and service was started. This process improved the selling of cars, because the customers could get additional value in the form of continuous service opportunities. This allowed the situation of car dealers to strengthen compared to that of individual car imports. This boom stopped in 1995, when only 68.654 new cars were sold in the country.

Since the beginning of the 2000s, the significance of Hungarian machine and vehicle manufacturing has been growing continuously. In 2009, 115,000 people were employed in these two industries (of whom 68,000 were in the vehicle industry). This means 20% of the labor force in manufacturing industry.

As a result of the financial crisis the number of car dealer companies reduced from 1,200 (in 2008) to 950 (in 2010). According to the forecasts, this reduction has not ended and in the future 750–800 car dealers will provide the Hungarian customers. In 2010 the number of cars sold decreased to one third of those in 2007. The most acceptable strategy for the car dealers is to combine distribution with car repair and to strengthen the good connections between the manufacturers and the dealers.

The KOPINT Business Climate Survey Research Foundation found that the operating profit level depends on "products manufactured by the company added value, the innovation, the company's strategic planning, and the quality of management and business organization." (Gyukics et al. 2011)

In Hungary in 2010 more than 350 companies produced automotive parts and 70% of them worked under audited quality control. More than 90% of the cars and almost 90% of the motors are exported (Antalóczy & Sass 2011).

The requirements for the main suppliers in the machinery and the automotive industry are considered to be as follows:

- Quality certification, advanced enterprise management and application management systems; reliable and consistent quality, use the VDA system,
- Capital, which is essential for development,
- Number of employees, labor training; ideal for medium-sized companies with reserves,
- Distance from the customer; in time rather than in space,
- R&D, innovation, product quality; maintaining competitiveness, it is necessary to keep up with the ever-changing needs, which is not easy, because the automotive industry is one of the fastest-growing industry (Gyukics et al. 2011).

In the above-mentioned study, some proposals were formulated for improving the Hungarian competitive position of small and medium-sized companies:

- Training of engineers with practical knowledge,
- Development of metallurgical professions education,
- Improving school language teaching
- Acceleration and simplification of grants,
- Simplification of the regulatory environment,
- Lower limit of R&D projects, and lower limit of deductibles,
- More flexible regulations of employment (Gyukics et al. 2011).

The influence of the financial crisis on the car industry

The global financial crisis, which started in 2008, had an adverse effect on the property market and the car market. The sharp fall in liquidity meant the decrease of the financing options, which resulted in the postponement of car purchases, mainly. However, regardless of the crisis, the automotive industry was already having difficulties before 2008. The market began to saturate, capacity surpluses occurred, people bought on credit, and there was a growing demand for energy-efficient cars (Antalóczy & Sass 2011).

It can be regarded as a positive indicator that the car factories were not shut down. This could be due to the flexibility of manufacturers, their work and organizational experience and adaptation of the workers (Rechnitzer & Smahó 2012).

Governments of many countries have taken various measures to protect the sector and to promote sales. One of

these measures – also introduced in many countries – is the so-called "scrappage program" which is a government budget program to promote the replacement of old vehicles with modern vehicles. When consumers replace old, polluting, non-energy-efficient cars with new cars, they received support (OECD 2010).

Scrappage programs were touted with different names, mostly referring to an environmental benefit. The Vehicle Efficiency Incentive in Canada was based on fuel-efficiency of cars. In Germany the economic stimulus program was called "Umweltprämie" (environmental premium) and in Austria "Ökoprämie" (eco-premium) while most of the public referred to it simply as "Abwrackprämie" (scrappage premium). Other countries have not tried to connect the program title with an environment aspect - still the Italian "Incentivi alla rottamazione" (scrappage incentives) and French "Prime à la casse" (scrappage premium) require the new car to meet modern emission standards. The German scrappage incentive scheme and the British scrappage scheme do not have such requirements, and the UK scheme was openly sketched on the target to provide financial support to the motor industry. Similarly, the United States Congress devised a scrappage scheme, commonly referred to as "cash for clunkers," as part of a general Automotive Stimulus package series; however, the voucher is only given when the newer car has a better fuel efficiency than the old car.

The scrappage premium program of the United States basically failed. Financed by the tax payers, the program was originally meant to strengthen the market positions of the factories in Detroit, however almost 2/3 of the sold cars were from abroad, mostly from Japan and Korea. As a result of the scrappage premium program, sales initially increased, however after the shopping fever ended, the American motor industry lapsed back into its previous level.

Now we can see that in a number of countries in the world where the motor industry is in an open economy, the demand increased for the non-premium, fuel-efficient cars as a result of the scrappage programs. General experience is that the scrappage programs had no effect on the national employment as well as on stimulating innovation, while the allowance related to the programs made up a significant amount in the country's budget. This explains that after the initial success, these programs died down relatively soon.

According to the consulting firm KPMG (Office of Employment, 2011) in the world there are two largely independent processes taking place in the automotive industry:

"In developed countries, a strong technological renewal takes place, and this is driven by the expansion of production. New, energy-efficient and no or little contaminant models are introduced, as well as layer model sare shown that intend to satisfy the differentiated consumers' needs. This market is only slightly sensitive to price.

In emerging market economies such as the BRIC countries (Brazil, Russia, India and China), by contrast, the focus is on the production quantity, the target is the larger-scale production of traditional models.This market is highly price sensitive."

Ernst & Young's 2010 automotive analysis (Demeter 2010) concluded that, in contrast to Western European countries, the automotive industry in Central and Eastern European countries felt the impact of the crisis to a lesser extent. These countries produce mainly small cars, whose demand did not fall significantly during the crisis, although the selling indicators of the largest producer of such cars, Suzuki, were also seen to decrease. Audi, the largest exporter, "had difficulties because of the crisis, which arises from the company's premium category role, on the other hand, the engines manufactured in Hungary mainly target those countries which are situated in Europe's crisis-hit regions" (Demeter 2010).

At the "Automotive Hungary" International Automotive Supplier Exhibition (2013), the Executive Secretary of the Hungarian Automotive Industry Association (MGSZ), Csaba Kilian, said that "the automotive industry is the fastest growing sector of the Hungarian economy, which has gone through a quantitative and qualitative leap in recent years, and which received more than 4 billion Euros of capital in the past 5 years" (MTI 2013).

In 2013, the factories operating in Hungary produced nearly a quarter million vehicles. By 2014, this number could increase to 400,000 if Suzuki and Mercedes realize their plans, and Audi will be able to fully take advantage of its expanded capacity. "If this is achieved, then the Hungarian automotive industry would have about 3 percent of the EU's total car production capacity, and will be preceded Italy's performance in 2012, and get closer to the 1.2 million of the Czech Republic and to 0.9 million of Slovakia in last year's data. The number of manufactured cars per thousand inhabitants in the area may be above the EU average in Hungary; in 2014 the expected value is about 40, which is close to the 2012 Spanish level" (Ádám 2013).

In recent years, several research publications have also stressed that building on the results of research, development, and innovation will play a significant role in companies in maintaining competitiveness, and in a quick recovery from the crisis. Further, the financial and structural problems have had serious effects on technical development. Without modern technical solutions and innovative approach, enterprises are hardly able to survive, to be stable, to develop their business, and to improve their competitiveness (Daróczi 2005).

Thus, in the following sections the essence and significance of innovation and R&D are summarized briefly.

The role of R&D in the innovation activity of enterprises maintaining their competitiveness

The definition of innovation in the Hungarian literature is not uniform.

Innovation

- is always something new establishment (production of new products, introduction of new production processes, the acquisition of new markets, access to new sources of supply, the establishment of a new organization)
- innovation process covers the R&D activities, through implementation, marketing, and the practical utilization,
- is a complex system of activities, with the ultimate goal of competitiveness, economic advancement by promoting the always-changing customer / user needs. Based on this, we can say that innovation is a strategic tool for improving competitiveness;
- The success of an innovation will be decided during its practical use, on the market.

In the most of the classical innovative models R&D is the brainstorming phase and the subsequent foundation of the innovation process. In this way, an integral part of the

innovation process is the research and development. This emphasizes the practice which is often mentioned, that RDI is available, indicating the close interaction between R&D and innovation progression.

In Hungary, many synonyms, and definitions are used as substitutes for R&D and innovation, even though the two concepts are not synonymous. The R&D results will not automatically mean economic success; in addition, innovation activities are also required. The RDI activities are important governmental tasks. The introduced technical innovations may only be successful together with other organizational, management and market innovations (Havas 2007).

According to Ivanyi and Hoffer (2011), all R&D is innovation, but not all innovation is R&D. Research and development is the essence, the initial point of innovation activities.

Basic research takes place mainly in research institutes or higher educational institutions, while experimental development takes place in different enterprises. Applied research is usual in academic and research institutions, in research facilities and in enterprises, too. To use the R&D results in practice, application of other innovation activities is necessary, for example engineering, manufacturing, marketing, etc. Innovation can be financed through R&D expenditures. Nevertheless, innovation should be considered as a more complex activity, which incurs intellectual effort and material expenses (Figure 1).

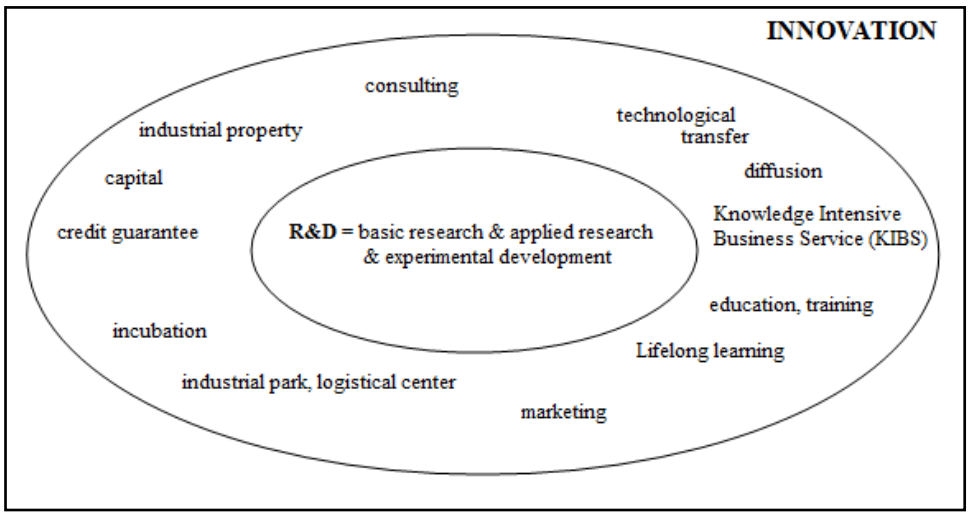

Figure 1. The relationship between innovation and R&D
Source: Hoffer & Katona (2012)

Innovation is also considered as practical application of the research results. It may be well distinguished from the R&D activities. Significant differences between R&D and innovation are in financial issues; innovation needs much more financial assets than R&D. Innovation is part of the establishment of productive capacity, and also means the sales related tasks, and the expenditure them. (Tarnói 1997)

Briefly, innovation is a complex, continuous renewing process of activities which facilitate economic development and growth. Its ultimate goal is the satisfaction of the market's needs as fully as possible by promoting the utilization of research results (Husti 2009).

"The innovation system is the field of knowledge production, dissemination and user institutions that contribute to the development and diffusion of new technologies, both individually and collectively. Capabilities and the relation among them are determined by each institution and shows the innovative performance of a nation or a region's companies. These institutions gave rise to the framework within which governments develop and implement policies in order to promote the innovation process. The operating system of interrelated institutions helps to define, to preserve and transfer new knowledge, new skills and new products to understand the new technology (based on Nelson, Freeman, Patel and Pavitt, and the definitions of Metcalfe)" (Inzelt & Bajmócy 2013).

Innovation should be a tool by which enterprises can increase their profitability and value. The innovative company enjoys competitive advantages to ensure its proper position in the market in the long run.

Various international surveys and studies have shown a correlation between the size of companies and innovations, a correlation that has become stronger since joining the EU (Illés et al. 2012). In general, large firms are more innovative than micro, small and medium-sized enterprises. However, in most countries, there is no significant difference between the micro-companies and medium-sized enterprises, and even the former's innovation tendency sometimes even surpasses some of the medium-sized companies (Huston interview 2007)

The literature draws attention to the growing consensus that the role of small firms in innovation is increasing significantly. Innovation is an opportunity for survival. In the absence of size benefits, the most important source of competitiveness is innovation (Lewis et al. 2002).

According to a broader approach the most important characteristics of the innovation system are interactive learning and interaction rules, norms, and attitudes. The first striking representative of this trend is Lundvall (1992) who pointed out that the research needs to focus on - in addition to the innovations of users and producers of interactions - the examination of the national system of innovation in a wide variety of interactions (eg. industry and universities, government and the commercial sector).

Kiss points out that domestic firms are less open to external sources of innovation. The strongest factors

inhibiting the innovation activities are problems among the institutional elements, such as policies, legislation, regulations or tax rules (Kiss 2013).

Business Europe (2009) refers that Europe should encourage entrepreneurs through taxation. The organization believes that if governments do not act, the young, innovative companies will succumb to global competition due to the chronic lack of funding. Within Europe, Hungary has the highest proportion of companies that have not performed innovation activities.

A firm with innovation activity can achieve the following results:

- Exploration of new markets;
- Product range expansion;
- Replacement of current products / services / technologies;
- Optimization of the production process;
- Quality improvement;
- Reduction in spending;
- Reduction in consumption;
- Reduction in environmental pollution;
- Adaptation to the changed economic and political controls and regulations.

Innovation is a tool by which the company can increase its profitability and its value. The innovative company can gain competitive advantages to ensure its proper position on the market in the long run. In order for a firm to be innovative, the following factors should be kept in mind:

- The development of an extensive system of relations,
- Ensuring the appropriate level of knowledge,
- Carrying out R&D activities,
- Production of high value-added products / services,
- Fast reactions,
- Initiative.

The competitive advantage of enterprises may be maintained in the long term only in circumstances that allow permanent research and development for innovation.

In the knowledge-based economy, knowledge is in the center of the competitive businesses: a highly skilled labor force is employed in producing new knowledge, high value-added output, and creating innovative products/services/technologies. Only those companies are able to be successful that are able to follow this way of operation.

Mogyorósi et al. (2009) in their study pointed out that innovation activity and innovation capacity are among the most important sources of competitive advantage of enterprises. The role of innovative organizations has increased greatly in recent years.

Inzelt & Szerb (2003) clearly define the innovative firms: those firms that reflect an innovation-oriented approach in their management and operation, and whose basic purpose is to improve their competitiveness.

The appearance of businesses in new markets needs continuous technology improvements. There are several ways of making technological improvements, and every business should consider their own potential. Although it is not possible in all industries to introduce new technologies, continuous renewal is the interest of every business.

Gurabi (2009) address several questions relating to innovation in Hungary. "The increase in R&D and innovation support activities are key economic goals for the current government. Each government is trying to improve the current R&D spending from 0.9% of GDP to 2-3% of the European average. Why are we far from this data? What could be the reason? It is perhaps because of incomplete knowledge of law, unknown financial possibilities, or simply a dislike of a new thing. We do not know, but anyone who just pays a little attention to innovation recognizes the possibility that built-in incentives of the taxation could lead to a significant increase in development, instead of through paying taxes. Manufacturing and service firms have raised many original ideas, but do not get priority in the absence of the implementation. In the Hungarian society, there is no intention to carry out conscious and continuous improvements, for which the Japanese created the separate concept of "Kaizen". The present tax environment in Hungary may be considered favorable for research and development activities. Experience shows that companies and institutions are still not utilizing the different R&D funding opportunities efficiently."

According to Warda (2006) the indirect incentives of R&D&I activities through taxation can be classified into three groups in the practice of OECD countries:

- Accelerated depreciation for R&D activity of machines, installations,
- R&D costs (fully or partially) reduced the tax base,
- Tax incentives.

Tax reduction programs were introduced for firms performing R&D activities as early as the 1980s. In the past 20 years, changes in the conditions for the program have been made several times, but each program is still in place today. These measures area significant incentive effect on the rate of RDI activities. The programs are basically aimed at the SME group of tax reduction potential, impose relatively little administration on businesses, and provide a significant amount of relief after the R&D activities.

Within the framework of each program precisely definitions are given for the R&D expenditure in respect of which tax allowances may be available (personnel engaged in R&D wages, materials, new machinery, equipment costs, amounts paid to universities, etc.). Those companies that had no taxable income could receive a tax credit. The loan repayment depended on the business tax situation. Companies with lower incomes could group the loan amount into two parts. The current loan financing costs had to be paid back in total, while the capital investment needed to be repaid only in part. Non-profitable businesses could deduct the tax allowance from of their future income. After the third year, the enterprises could get the amount of the still remaining tax credit in the form of support. The young innovative enterprises got special attention and support (8 years and younger and were spending 15% of all R&D expenditures).

After the regime change in Hungary, the most dynamical change was experienced by the car manufacturing and supplier industries. The related R+D activities have also developed as well, the set goal is to have 20 innovation centres for the motor industry in the country by 2018. The Hungarian motor industry is planning to spread the new hybrid and electric cars, this goal is supported by the "Jedlik Ányos" programme.

According to Ernst and Young's study (2013) on the European Motor Industry where they interviewed 300 manufacturers and suppliers, the Hungarian motor industry is one of the most competitive in Europe due to its low manufacturing costs. In the study 15% of the repliers represented the manufacturers, while 85% of them were suppliers. 11% of the repliers found the Hungarian market extremely competitive, while 46% of them thought that it was rather competitive. The Czech Republic ended up on the top of the European competitiveness list, while Slovakia ranked 2nd, followed by Hungary at the 3rd place.

The situation is less favourable in the area of innovation

strength and product quality, where Hungary ranked 11th in Europe in 2012.

The most important long-term goal is to develop a stabilized supplier chain with such technological competencies, that are able to serve the premium motor manufacturers. This requires setting up common businesses in order to strengthen cooperation between manufacturers, the technological development centres and local suppliers.

The 'Car Innovation 2015' study summarizes all the methods that could help car manufacturers and their suppliers renew their products and services to foster economical growth. These development ambitions are based on long-term innovation thinking, intelligent business models, customer oriented innovation marketing and cost effective development procedures.

The motor industry's big players consider the Hungarian R+D condition system a competitive advantage. The human capital has a big role in the fact that more and more manufacturers set up R+D centres in Hungary. These companies also involve the institutions of the national higher education system in their R+D and innovation projects. Good examples for this are the development of the institutes of higher education in the cities of Győr, Kecskemét and Szombathely.

The motor industry means an important breakout point for the Hungarian economy. Businesses from this industry set an example for other designers, researcher or investors and the success is fuelled by innovation. It is important to note that a good idea alone is not enough, companies should also analyse if their ideas are economically viable – only then they will be eligible for financing.

The IT companies are also taking advantage of the Hungarian car market's boost. As a result of this the motor industry's companies more often use innovative technologies, especially in the service areas like controlling, marketing, finance etc. The future is in the mobile devices and cloud solutions. A company in the motor industry can only be successful if it can react fast to the procurer's needs as well as the in-house operational signs. To be able to reach and properly display the data and information – even on mobile devices - is of key importance. (Qualysoft Information Technology Ltd. 2012)

OBJECTIVES OF THE RESEARCH

Previously, several studies have examined the effects of the operation of the tax system on small and medium-sized enterprises. Illés et al. (2013) evaluated the connections between innovation activities and tax allowances in the Hungarian agribusiness sector. In another paper, during an assessment of the tax system in East-Central Europe – including Hungary– Illés et al. (2011) concluded that the tax system for small and medium-sized enterprises might be considered as an accelerator for development.

Accordingly, the aim of our research was:

- to consider the incentives in corporate tax law increasing there search, development, and innovation activities of enterprises;
- to evaluate the conditions to encourage elements of R&D activities;
- to explore the links between innovation activity to promote R&D activities and the geographical location, the form of business, size of business and the ownership structure;
- by means of statistical analysis to explore the relations that make it clear how the corporation income tax can serve the current administration's efforts to create a more favourable business environment for corporations operating in the car trade, which can promote research and development in their innovation activities.

MATERIALS AND METHODOLOGY

Items reducing the profit before tax (indirect tax benefits):

1. Reduction received on patent royalties,
2. Design patent allowance,
3. Direct costs of post-research and experimental development allowance
4. Investment allowance for small and medium-sized enterprises,

Tax Allowance Items (direct tax benefits):

5. At least HUF 3 billion investments made in disadvantaged regions,
6. Tax allowances on research and experimental development costs of payroll,
7. Deferred tax allowance on research and experimental development costs of payroll,
8. Tax allowance on the software developer payroll (10%),
9. Deferred tax allowance on the software developer payroll (10%),
10. Tax allowance on the software developer payroll (15%),
11. Deferred tax allowance on the software developer payroll (15%),
12. Rebate to small and medium-sized enterprises,
13. Development tax incentives with government approval,
14. Tax allowance previous investment.

It is apparent from the list that it was possible to make use of mitigation in relation to corporate RDI activities in tax rebates under 14 different titles in 2008. In 2014 only 5 different titles was deducted from the tax base, and from the tax. Other allowances were dropped from the corporate tax law.

Each business parameter (variable) is utilized for research:

- The identity of taxpayers (according to the classification of company size, geographical location, company form)
- Profit indicators,
- Tax categories,
- Balance sheet data.

Table 1.
The distribution of joint venture companies according to their size in 2008

Size of companies	All		Car dealers	
	number	%	number	%
Micro	309,980	88.9	3,590	84.4
Small	25,729	7.4	542	12.7
Medium	4,807	1.4	85	2.0
Large	8,107	2.3	38	0.9
Total	348,623	100	4,255	100
Rate of car dealers	100%		1.2%	

Source: Own construction based on APEH data on income tax returns in 2008

In the database of corporate tax sheets 1-2% of business enterprises dealt with car distribution. Among the car dealer companies - compared to the distribution of all company data - a smaller share is represented by large businesses (0.9%), while the small and medium-sized enterprise sector has a major proportion (14.7% compared to 8.8%). The combined share of the MSME (micro, small, medium-sized enterprises) sector was also higher among car manufacturers, (Table1) large ones did not reach 1%.

RESULTS

Conditions of R&D activities as the basis of innovation-related tax incentives

Tax allowances reducing the profit before tax

- Only three companies used the first reduction option (discount on royalties) while 1% of the businesses took advantage of the second advantage (patent allowance). The conditions of these tax reductions could be satisfied very easily.
- According to the 3rd item the payments or tax base were reduced by the direct costs of R&D. Based on joint research with the research institutions the accounted costs were validated three times (up to HUF 50 million). Only 2% of these companies took advantage of the opportunity. This low value indicates that the enterprises did not conducted R&D activity in 2008.
- According to the 4th item the MSMEs could reduce their profit before tax by the amount of investment (HUF 30 million) in new property, plant, equipment, etc. Enterprises did not take advantage of this opportunity, despite the fact that the tested companies were 99% of the sub-sector enterprises MSMEs. Significant tax savings could have been achieved with this reduction, which would have helped businesses increase their own resources. Additional calculations carried out in this area have shown that the enterprises do not use this allowance due to a lack of resources and the small profit before taxation. In enterprises that carried out development, the profit before taxation was not high enough to deduct the amount of investment.

Allowances reducing the calculated tax

- The 5th item of allowance could be made use of in connection with a HUF 3 billion production investment. There was only one enterprise that used this allowance, presumably because of the high amount of investment. (From 2012, this allowance has been discontinued.)
- The 6th (R&D wage costs oftax allowance) and 7th (deferred tax allowance of R&D wage costs) allowances were not used by the enterprises. Nevertheless, these allowances are important. According to the possibility of deferring – if the calculated tax of current year did not allow the deduction – there was a 4 year time limit for deferment. (Both allowances have been discontinued from2012.)
- The 8th, 9th, 10th and 11th allowances are all related to the labour costs paid to software developers. The allowance could maximum be 10% of the labour cost, while MSMEs could decrease their calculated tax base by another 15% above the 10% allowance. Only 1 % of the companies took advantage of the 10% allowance, while two companies used the deferred version of it. However, amongst the MSMEs, no one used the extra 15% allowance (10th allowance), because their tax base was not high enough, however the deferred form of it was very popular, almost 70% of them applied for it. (All allowances related to software development were discontinued in 2012.)
- Related to the 12thallowance, SMEs were able to reduce their calculated tax by the amount of 40% of the interest paid in connection with credit for the development of tangible assets. This allowance was not used by enterprises, despite the fact that they had credit for development of tangible assets. The enterprises had not calculated tax.
- The 13th allowance is related to a great amount of investment (HUF 3 billion worth of investments), this is the reason why enterprises did not use this allowance.
- The14th (previous investment allowance) was not used by any enterprise.

Introduction of enterprises using tax allowances

The data show that 28% of the car distributor enterprises did not use any tax allowances related to their R&D activities.
- Examining the use of allowances according to entrepreneurship category, we can say that 30% of micro-enterprises could not take advantage of the allowances. The minimal difference between the values of 28% and 30% indicates that those enterprises which could not use allowances were basically micro-enterprises. One reason for this is that the use of allowances had strict and long-term impact conditions. The complicated conditions of tax allowances significantly increas the administrative burden of the enterprises. This fact affected the group of companies (micro-enterprises, the vast majority of companies without legal personality) very adversely, because many of these small enterprises conduct their accounting functions without professional assistance and they have not enough information or knowledge about the allowances offered by the corporate tax law.
- Interesting results can be observed when we examine the car distributors according to their location. There were minimal differences (1-3%) between the regional distribution of the enterprises and among those who do not use tax allowances. (E.g. the share of car distributors operating in Central Hungary Region was 41%, and 44% of the enterprises which do not use the allowances were also in this region.
- The examined enterprises reduced their tax with seven different tax allowances although there were 14 different options available. In 2014, there are only three of the original seven types of allowances given in the Corporate Tax Law. Unfortunately, those allowances were withdrawn that were "popular" among the enterprises (tax allowance of R&D activities related labour costs and the software development labour cost). These allowances were most popular because their conditions were less strict and in a sense –regarding the accountability– left greater latitude to enterprises. The experience of tax audits in several cases showed that many enterprises used these allowances irregularly, so the reduction of the tax was illegal.
- Based on our examined data, the tax allowances regarding R&D activity, it may be stated that limited liability enterprises showed an outstanding value of 90%. Of the tax allowances used, only 4% were used by limited partnership enterprises and 6% by join stock enterprises.
-The numerical values of tax allowances were summarized per enterprises related to different titles of R&D activities. According to various criteria (entity, regional location, company size, and presence of foreign ownership), we

calculated an average of the amount of allowances. We took into account only enterprises, which used tax allowances. The results are illustrated in Figure2.

- According to the legal form of the enterprises, the highest average allowance appeared (HUF 212 million) in joint stock enterprises (Rt), followed by the limited liability companies (Kft) (HUF 28 million), while limited partnership companies (Bt) had the lowest value (HUF 4 million). Obviously, the bigger firms (with stronger capital) operate in the form of joint stock enterprises. Our results also show that these enterprises could utilize most of the corporate tax allowance.
- Regionally examining the average values of the tax allowances, the largest value was observed in the Central Hungarian Region (HUF 41 million); in case of other regions there were no significant differences.
- The average allowance value is directly proportional to the size (but not linear). The maximum value of the allowances was in large enterprises (HUF 932 million). In the medium-sized enterprise the average allowance value was HUF 233 million. In the micro enterprises the value was very low, HUF 3.5 million.
- The difference is nearly ten times bigger, depending on whether the enterprise has a foreign shareholder or not. In the enterprises where a part of the equity was in foreign hands, the average value of the innovation tax allowance was HUF 606 million.

In summary, it can be stated that the larger enterprises with foreign ownership that are operated in more developed regions were those which used significant allowances in innovation.

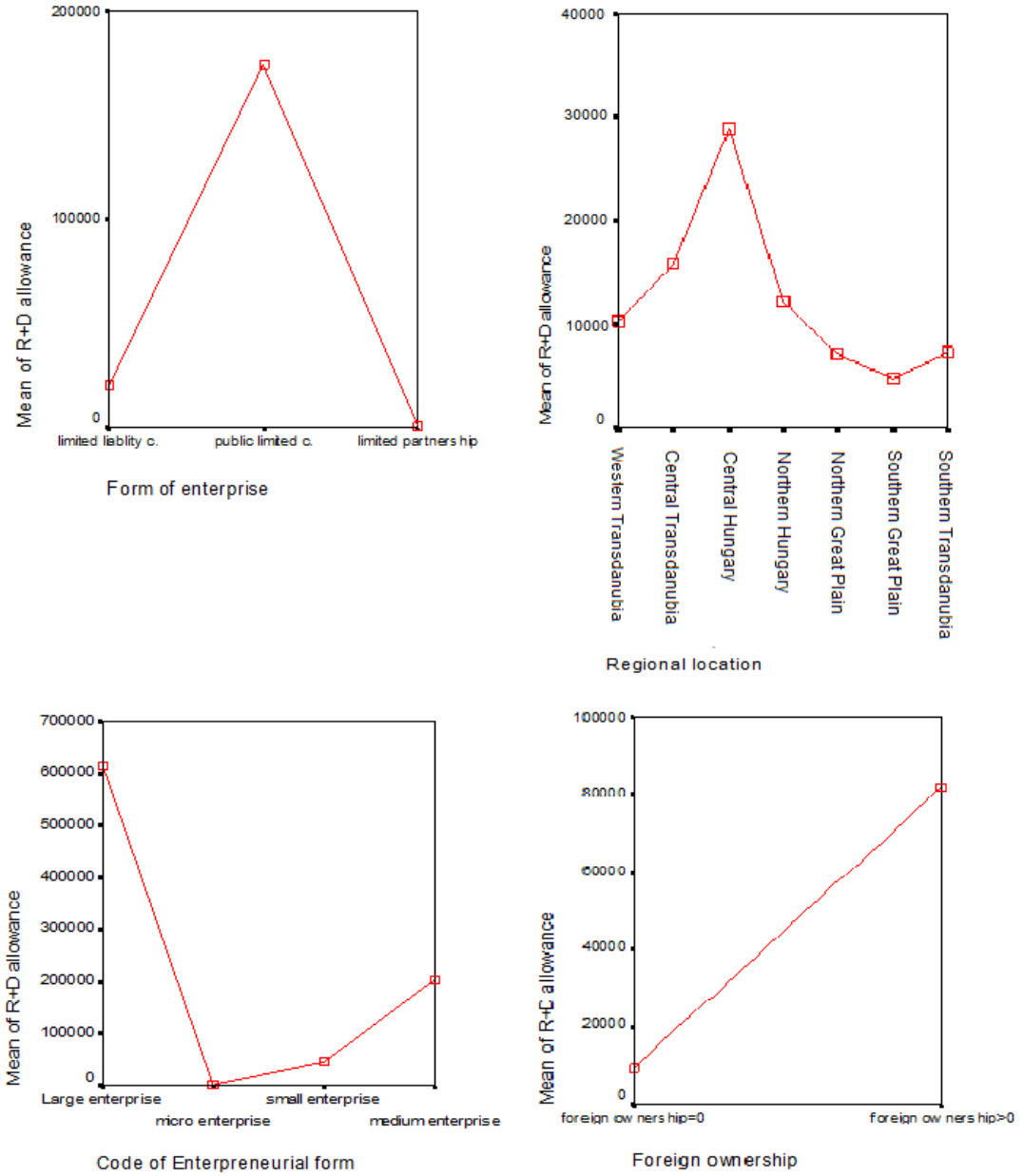

Figure 2. Average R&D activities related to tax incentives, according to the legal form, regional location, company size and foreign ownership among car dealer enterprises (in thousand HUF)

Source: Own construction based on data of APEH – Income tax return in 2008

We analyzed enterprises according to the number of allowances used. In our sample, only one company could utilize three types of allowances. The number of enterprises using only one allowance was 2,964, while 92 enterprises used two allowances for reducing their profit before tax or reducing calculated tax. The data of Table 2 show that the enterprises which had higher profit before taxation, a larger taxation base, or higher calculated tax could use more tax allowances.

Table 2
Some economic data of car dealers depending on the R&D activities related to the number of tax allowance used among car dealer enterprises (in thousand HUF)

In thousand HUF	0		1		2	
	number of allowances					
	N	Average	N	Average	N	Average
Profit before tax	1198	2308	2964	268	92	6038
Tax base	1198	-584	2964	-2793	92	1870
Tax	1198	411	2964	662	92	3048
Rate of the foreign owners (%)	1198	8	2964	2	92	6
Long term liabilities	1198	1853	2964	4325	92	15112

Source: Own construction based on data of APEH – Income tax return in 2008

CONCLUSIONS, RECOMMENDATIONS

We agree with the idea that the innovation of a nation's economy that is based on R&D activities – particularly in business enterprises – can be influenced by means of government regulation, especially the potential of taxation.

The corporate tax system between 2008 and 2012 contained many direct and indirect elements for encouraging R&D activities in business enterprises. In a relatively great part of the tax reduction options, "feasible" criteria were formulated by the legislation, while in others the conditions were more strict and many of the companies could not reach compliance with them.

Based on the data of our research, in the investigated car dealer firms the use of the tax benefits were not significant, even in those cases where the conditions were easier. From the entrepreneurial side of the problem it meant that they did not have a sufficiently large tax level and profit before tax, from which the discount could have been deducted. Where it was possible, the firms deferred tax allowances.

Despite the regulations provided by the deduction of R&D costs in the form of tax allowances, the majority of businesses did not perform any R&D activities at all.

Since 2008, there have been several changes in the income tax regulation of corporations linked to the R&D activity and the related tax allowances. The number of tax allowances were reduced and some that were popular among businesses were abolished. New ones did not appear.

Our analyses showed that the allowance scheme operating in 2008 did not operate effectively. There were several problems which need improvement or changes in the future. Based on our experience and results, we suggest the further development of the system, as follows:

- its complex monitoring;
- the establishment of new principles (in addition to the R&D activities linked to innovation activities integrated into the system preferences)
- harmonization of the various elements,
- simplification of the conditions in order to be accessible for micro, small, and medium-sized enterprises.

It would be useful to use in Hungary some practices of tax allowances of OECD countries. (E.g.: Loss-making start-ups would receive the sum of the possible tax allowances in the form of support.)

Basically larger SME-s operating in the form of limited companies or joint stock companies – mainly those that have foreign ownership – could use the tax allowances. Due to a significant decrease in the demand for cars, in order to survive smaller firms need to introduce diversification towards other services. These options are inevitable for their development and additional funds are needed for them. For improving their operation, those tax regulating tools which are already applied in practice in the OECD countries would be useful.

A positive improvement in tax allowances would be needed, especially for young innovative enterprises. In the 2014 corporation tax legislation, two new items appeared in the R&D issues. For example, MSMEs may reduce their profit before tax with the costs of software products previously in use, or in other companies, the results before tax may be reduced by the direct costs of R&D activities.

It is important to establish a simpler and more transparent regulatory environment, while further reducing administrative burdens, and to introduce a regulatory reform of the system of quality elements and installation of continuous validation. It is very important to strive to eliminate the unpredictability of the regulatory system, or at least reduce it.

The differences between the regions should be taken into account in formulating preferences into consideration. In particular, it may be appropriate to improve the underdeveloped regions with high unemployment rate options. The current legislation does contain such elements, but the results of our research show that their role is not a sufficiently effective incentive. The region of Central Hungary was and is in a better position than other regions.

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The Effect of Organization Culture and Uncertainty in Supply Chain Management - The Albanian Beer Industry

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SUMMARY

Although research interest in supply chain management is growing, no such research has been done in Albania. This paper is one of the first to investigate supply chain management practices in the Albanian beer industry and the effect of supply chain uncertainty and organizational culture on supply chain management. Semi-structured interviews were conducted with the managers of the main beer companies. The results show that a high level of supply chain uncertainty does not always bring high engagement in supply chain management, as cultures with internal orientations impose limits on the execution of supply chain management practices.

Keywords: Supply chain management; Supply chain members, Supply chain uncertainty; Organizational culture; Albanian beer producers

Journal of Economic Literature (JEL) code: M1, L6, L7, L8, Z1

INTRODUCTION

Supply chain management is a concept widely discussed in academic articles (e.g. Boyer & Stock, 2009) and by practitioners (Naslung& Williamson, 2010). Interest in supply chain management increased after 1980 for several reasons. Firstly, because at that time only a few companies were vertically integrated, and they realized that they could no longer gain a competitive advantage alone, but they had to collaborate with suppliers and customers (Lummus&Vokurka, 1999).

Another reason is the increased awareness of the many benefits of supply chain management, which include: improvement in ROI (return on investment), low inventory levels (Boyer & Stock, 2009), increased customer and supplier satisfaction (Myers, 2010), improvement in profit and market share (Myers & Cheung,2008) and many more. Summarizing, the benefits of supply chain management relate to cost reduction and improvement of relationships with the chain members**.**

The third reason is the high uncertainty of the supply chain. One of the key sources of uncertainty is demand uncertainty, as it brings unsatisfied customers that in turns affects the profit and the reputation of the company. Supply chain management can reduce demand uncertainty as it facilitates forecasting. Firms that engage in supply chain management work together and by doing so, they have better knowledge about their competition and market demand, making forecasting easier (Lummus&Vokurka, 1999). The literature review section will describe how supply chain management initiatives can reduce the other sources of uncertainty.

A recent report concluded that uncertainty is affecting the supply chain in four ways: by adding costs, increasing inventory levels, increasing lead times and reducing speed to markets (Butcher, 2011). The impact of these negative effects is sometimes felt in the long term, so reducing supply chain uncertainty is of strategic importance for companies. But does engagement in supply chain management reduce uncertainty in every situation or only under certain circumstances? This paper will try and present an answer to this question.

Research aim and propositions

The aim of this research is twofold: first to investigate the supply chain management practices used by Albanian beer producers and second, to analyze the effect of supply chain uncertainty and organizational culture on supply chain management. The research is focused on Albanian beer producers.

There are four main reasons why I chose Albanian beer producers for this research.

Firstly, the consumption of domestic beer is increasing in Albania, due to the increase in quality and variety with reasonable prices (Chan-Halbrendt&Fantle-Lepczyk, 2013).

Secondly, the supply chain of the beer producers is global and so they can benefit more from engagement in supply chain management.

Thirdly, although interest in supply chain management is growing, no research has been done in the Albanian beer industry.

Lastly, the beer industry is an interesting industry as there are five big beer producers in a small country like Albania and they are surviving in a saturated market.

The global crisis of 2008 amplified the sources and level of supply chain uncertainty (Malik &Ruwadi, 2011). At the same time interest in supply chain management increased, as it helped in reducing supply chain uncertainty (described in detail in the literature review). This observation suggests the following proposition:

Proposition 1: Engagement in supply chain management increases when supply chain uncertainty increases.

Supply chain management requires sharing information, joint decision making, commitment, trust, and respect (Laskowska-Rutkowska, 2009). In other words, supply chain management requires focusing on building and managing relationships with the others. This approach is easier for cultures with external orientations. Cameron and Quinn (2011) define cultures with external orientations as the ones focused on interacting with others outside their boundaries. This discussion suggests the following proposition:

Proposition 2: Organizational cultures with an external orientation facilitate the execution of supply chain management practices**.**

The outline of the paper is the following: after the introduction section, there is a brief description of the Albanian beer industry, continuing with the relevant literature review regarding supply chain management, supply chain uncertainty, organizational culture and the relation of the last two to supply chain management. Then I will explain the methodology used. After the methodology section, I will discuss the findings, and I will conclude with limits of the study and recommendations for managers and future research.

THE ALBANIAN BEER INDUSTRY

In Albania, beer was first produced in 1928 with the establishment of Korca Beer by the investor Umberto Umberti (Italy) and Selim Mborja from Korca. There was a production capacity of 20,000 hl beer/year (1 hectoliter = 100 liters). In 1960, Birra Tirana was founded, with a capacity of 50,000 hl beer/year. After 1991 three other beer producers – Stela, Norga, and Kaon – and 80 mini-breweries entered the market (Kume, 2011).

The Albanian beer market has grown, even after the economic crisis began. This increase is shown by the improvement in the quality of Albanian beer, increased consumption of domestic beer compared with imported beer due to differences in price, an increased variety of beers and huge innovations in technology (Chan-Halbrendt & Fantle-Lepczyk, 2013).

The main players in the Albanian beer market are large and medium manufacturers, small producers that compete on low prices, and imported beers.The large and medium manufacturers are dominated by five Albanian companies: Tirana Beer, Stela Beer, Korca Beer, Kaon Beer and Norga Beer. Tirana beer is a joint stock company with a long tradition in the Albanian market. It is the company that holds the highest market share, thanks to its long presence in the Albanian market (since the 1960s). Korca Beer is wellknown by customers because of its special taste. Stela beer is the second largest producer after Tirana Beer. Kaon and Norga beers are two new brands that entered the Albanian market after the 1990s and were able to obtain a share of the beer market (Kume, 2011).

LITERATURE REVIEW

Supply chain management

According to the traditional definition, supply chain management has to assure supply at the lowest initial purchase price. Based on this view, companies cannot allow their supply chain partners to become very important; instead, they must have multiple trading partners and the fierce competition based on price and performance will choose the best (Spekman et al., 1998).

Christopher (2010) lists the three main changes that increase the importance of supply chain management in recent years. Firstly, there is much understanding of the role of supply chain management in creating sustainable competitive advantage. The second change is that supply chain management is not just an extension of logistics management, but is more about managing relationships with the supply chain members. The third significant change is the transition from a stable business environment to a dynamic and less predictable one. This transition requires agile and adaptable supply chains.

None of the changes, mentioned above, support the traditional view of supply chain management. The modern definition of supply chain management that will be adopted in this paper is: "The management of upstream and downstream relationships with suppliers and customers in order to deliver superior customer value at less cost to the supply chain as a whole" (Christopher, 2010: 14).According to this definiton, the focus of supply chain management is on the relationship with the supply chain members, trying to achieve the best outcome for everyone.

Supply chain and supply chain management are crucial concepts in the paper, so a clear-cut interpretation should be provided, after the detailed discussion in the previous paragraphs. The supply chain includes all the activities related to moving goods from the raw materials stage through to the end users, while the role of supply chain management is to move goods quickly through the stages, by delivering more value (Christopher, 2010).

Engagement in supply chain management requires collaboration that is easier when you have the right partners, so an important aspect of supply chain management is the selection of supply chain partners. According to Barrat (2004), supply chain collaboration means sharing joint objectives, intellectual agility, trust, respect and commitment, to get the best outcome for each member. The last three factors are the ones that companies value most when they select their partners (Spekman et al., 1998). Prime selection is done based on their reputation, quality issues, financial performance and past experience with the company (Duffy, 2014). Normally selection criteria will vary for each industry and company, but criteria like economic benefits, tax and environmental advantages, a high degree of integrity and the existence of synergy are the most important criteria for selecting the supply chain partners (Spekman et al., 1998).

After the selection of the appropriate partners, companies must decide the level of engagement in supply chain management. Co-operation is the starting point for supply chain management. Companies that cooperate have few suppliers and long-term contracts with suppliers and

customers, but cooperation is not sufficient, so the next transition is to coordination, when real-time information is exchanged with the trading partners. For this they use mechanisms like JIT (just in time), EDI (exchange data information) and flexible manufacturing cells. The highest level is collaboration, based on trust and commitment with the supply chain members. In this phase companies exchange information in realtime, jointly make decisions, and share a common vision about the future (Spekman et al., 1998).

As was mentioned, the first step in supply chain management is cooperation, and the last step is collaboration. The main reason to engage in supply chain management is to enjoy the benefits of collaboration. The benefits of supply chain collaboration are more than just improved efficiency and effectiveness, including increased customer satisfaction (Myers, 2010), improved profits and market share (Myers & Cheung,2008), and reduced lead time and improvement in innovation (Spekman et al., 1998). Other reasons mentioned in the literature include political and environmental reasons (Brammer et al., 2011), tax incentives (Spekman et al., 1998) and more accurate and timely information (Whipple & Russell, 2007).

Supply chain uncertainty

A recent report concluded that uncertainty is affecting supply chain in four ways: by adding costs, increasing inventory levels, increasing lead times and reducing speed to markets (Butcher, 2011). The impact of these negative effects is sometimes felt in the long term, so reducing supply chain uncertainty is of strategic importance for companies. Strategies used by them to reduce uncertainty vary from building a flexible, aligned and agile supply chain (Lee, 2004), increasing the resilience of supply chains (Sheffi, 2005), or postponement and a flexible supply base (Tang, 2006). All these strategies require strong collaboration with the supply chain members, which will result into requiring continuous engagement in supply chain management practices. Many companies acknowledge their success to their relationships with their suppliers and buyers (Myers, 2010).

Lancaster et al. (2011) argue that the main sources of uncertainty can be divided into three groups: uncertainty that come from the focal company (internal organizational uncertainty), internal supply chain uncertainty that comes from the relations with the supply chain members, and external uncertainties that come from factors outside the supply chain.

This paper is focused on the internal supply chain uncertainty. Chen &Paulraj (2003) argue that internal supply chain uncertainty can be attributed to three sources: supplier uncertainty; demand uncertainty, and technology uncertainty. Supply uncertainty is related to indicators of quality, timeliness and the inspection of supplier requirements. Demand uncertainty refers to fluctuations and variation in demands, while technology uncertainty is connected with technological changes within the industry.

All the three phases of supply chain management – co-operation, coordination and collaboration – help to reduce uncertainty deriving from supply, demand and technology. Supply and demand uncertainty depends on demand forecast and supplier reliability (McLaren et al., 2005).As we move from one phase of supply chain management to another, more information is shared, and all the supply chain members closely work together, by facilitating forecasting (Spekman et al., 1998). More accurate forecasting helps reducing demand and supply uncertainty. By collaborating with suppliers, long-term relationships can be built, which in turns increases supplier reliability. Supply chain management initiatives also can reduce technology uncertainty, as the continuous sharing of information makes more visible the recent trends in technology (Boon & Wong, 2011).

Organizational culture

Hofstede et al. (2010: 17) define organizational culture as the "collective programming of the mind, which makes members of one group or category of people different from those of another."

Cameron and Quinn (2011) developed a competing value framework to study organizational culture. This framework focuses on two main dimensions. The first dimension differentiates criteria based on flexibility and dynamism versus the other criteria, based on stability, order and control. The second dimension differentiates criteria based on internal orientation versus those based on external orientation. These two dimensions are the main issues in supply chain management, so this framework is the most appropriate for examining the relationship between the organization culture and supply chain management.

From the combination of the two dimensions, four types of organizational culture arise: hierarchy culture, market culture, clan culture and adhocracy culture. The characteristics of each type of culture are presented in Table 1.

Table 1
The competitive value framework

Dimensions	Internal orientation	External orientation
Flexibility	Clan culture Shared values and goals Cohesion Collaboration Teamwork Main objectives are long term benefits and individual development Ideal for uncertain environment	Adhocracy culture Flexible Risk taking Adaptable to new opportunities Innovative Appropriate for hyper-turbulent environment Main objective is being at the leading edge of new product, services and knowledge.
Stability	Hierarchy culture Clear lines of decisionmaking Multiple hierarchical levels Formalized procedures and rules Conservatism Main objectives are stability, effectiveness and efficiency	Market culture Oriented toward the external environment High competitiveness Main objectives are profitability, secure customer base and strategic positioning

Source: Adapted from Cameron and Quinn (2011)

Supply chain management requires collaboration, which in turns requires membership, trust, commitment and sharing information (Laskowska-Rutkowska, 2009).There is little evidence in literature about the type of culture that makes the supply chain management process easier in organization.

METHODOLOGY

From the main five Albanian beer producers, only four become part of the study, as the managers of one of the companies did not agree to provide information about the topics of the research and be part of this study.

I conducted semi-structured interviews with the managers of each of the four companies. The persons interviewed were purchasing managers, a sales manager, and in one case the owner of the business. All interviews were conducted face to face, and the confidentiality of data was promised. I prepared a guide questionnaire to support the semi-structured interviews, which is presented in Appendix 1. It had three main parts: supply chain management practices, supply chain uncertainty, and organizational culture.

Beer is a product produced by process industry. According to Lee (2002), for this type of product, the best supply chain management techniques in presence of uncertainty are a reliable supply source, information sharing, synchronized planning, and process control. Based on this discussion, I decided to organize the first part of the questionnaire into three rate scale questions and open questions. The open questions were about the supply chain management practices adopted by the companies in terms of collaboration with suppliers, collaboration with customers and information sharing. The first rate scale question lists some techniques of supply chain management(related to this type of product) and the participants were asked to give an evaluation from 1 to 5, where 1= *do not use the practice* and 5= *use that practice always*. The second rate scale question was about the main reason to engage in supply chain management. A list of reasons was presented, and the participants were asked to give an evaluation from 1 to 5, where 1= *strongly disagree* and 5= *strongly agree*. The third rate scale question was about the reasons for selecting the supply chain partners, as reliable supply sources and partners are crucial for the management of the beer supply chain. Like in the first and second question, a list of reasons was presented, and respondents were asked to give an evaluation from 1 to 5. The interviewees were free to mention other reasons that were not in the questionnaire.

To measure supply chain uncertainty, I used the study of Chen and Paulraj (2003). As mentioned in the literature review, they identified three sources of uncertainty: supply, demand and technology uncertainty. The authors for each type of uncertainty provide a list of items (see the guide questionnaire in Appendix 1). The respondents were asked to give an evaluation from 1 to 5, where 1= *strongly disagree* and 5= *strongly agree*, to each item. Regarding supply uncertainty, a total score of 10 signifies that the suppliers fulfill all the requests and offer materials of consistent quality, so the supply uncertainty is low. An evaluation of 25 for the second dimension (where the respondent evaluates with the maximum points all of the five items) is related with high demand uncertainty. Lastly, high technology uncertainty relates with a total evaluation of 20 (in the case when the respondents evaluate all four items with the maximum points). The scores for each source of uncertainty were compared with the maximum scores, to evaluate the level of uncertainty for the three sources.

The last part focused on organizational culture, and consisted of open questions.

Academics evaluated the guide questionnaire, and I tested it on one of the firms participatingin the study. Some questions were improved and changed based on the feedback of the academics and the results of the first interview.

The most relevant ethical issues for this research were: confidentiality of data, avoiding causing harm and lacking respect, informed consent and promise to provide the participant with a copy of the study.

RESEARCH FINDINGS AND CONCLUSIONS

The name of the beer producers will not be mentioned as they asked to beanonymous, so we will call them Beer producer 1, 2, 3 and 4.

Reasons to engage in supply chain management

Table 2 summarizes the most and least important reasons to engage in supply chain management mentioned by the respondents.

Table 2
Reasons to engage in supply chain management

Beer producers	**What are the main reasons to engage in supply chain management?**	
	The most important	*The less important*
Beer producer 1	Increase profits Satisfy customer and supplier requests Secure reliable supplier and market for the product	Political reasons Environmental implications Tax implications
Beer producer 2	Increase profits Increase customer satisfaction Secure reliable supplier and market for the product Gain a strategic positioning in the market	Political reasons Improved productivity Tax implications
Beer producer 3	Increase profits Increase customer satisfaction Secure reliable supplier and market for the product Gain a strategic positioning in the market Improve productivity Reduce time to enter the market	Political reasons Tax implications
Beer producer 4	Reduce time to enter the market Improve productivity Environmental reasons	Political reasons Tax implications Increase customer satisfaction

The information suggests that Albanian beer producers focus more on the cost reduction aspect of supply chain management. According to them the main reasons to engage in supply chain management are: to increase profits, improve productivity, secure reliable suppliers and markets for the product, and increase customer satisfaction. The less important reasons mentioned by all are tax and political reasons. They argue that engaging in supply chain management for political reasons will destroy their reputations.

Beer producer 4, very differently from the others, argued that one of the main reasons for them to engage in supply chain management is environmental implications, while customer satisfaction is not an important reason. It is clear why they are in financial difficulties.

Supply chain partner selection

Table 3 summarizes the findings of what participants consider important when selecting a supply chain partner.

Table 3
Supply chain partner selection criteria

	What are the main reasons for selecting the supply chain partners?	
	The most important	*The less important*
Beer producer 1	Is reliable Has been reliable in the past with us Is committed to us Offers economic benefits Helps to reduce the production costs Helps to reduce the workforce cost	Offers political advantages Offers environmental advantages
Beer producer 2	Is reliable Has a high degree of integrity Has a good reputation Has been reliable in the past with us Offers economic benefits Improves our competitive position Helps to reduce the production costs	Offers political advantages Offers tax advantages Offers environmental advantages
Beer producer 3	Is reliable Offers economic benefits Offers tax advantages Offers environmental advantages Helps to reduce the production costs	Offers political advantages Has a high degree of integrity
Beer producer 4	Is reliable Has a high degree of integrity Synergy exists between us Offers environmental advantages Helps to improve the competitive position	Offers tax advantages Offers political advantages Offers economic benefits

All of the beer producers seek members that are reliable and help to reduce the production costs. They do not consider tax and political advantages as important criteria. Beer producer 4, very differently from the others, does not select the supply chain members based upon the economic advantages they offer.

Supply chain practices

The suppliers of many beer producers are unique and strategic; sometimes they have the same supplier, which is consistent with the findings from the previous part (the most important selection criteria for supply chain members is reliability). Having strategic suppliers requires building strong relationships with them, which in turn requires collaboration. But the beer producers are engaged very little in supply chain management. There is little collaboration, synergy and information sharing between the supply chain members.

Supply chain members do not possess software to exchange information in real time with suppliers and customers due to the high cost of implementing the software. Suppliers and special customers are not accustomed to use software and to provide information for inventory level, price etc., considered by them to be confidential and strategic, to the supply chain members. The Albanian beer producers are at the cooperation stage of supply chain management (see the literature review section), which is the starting stage of engagement in supply chain management.

Supply chain uncertainty

The sum of the evaluations given from the respondents for each type of uncertainty is presented Table 4.

Table 4
Ratings for supply chain uncertainty

Beer producers	**Supply uncertainty (out of 10)**	**Demand uncertainty (out of 25)**	**Technology uncertainty (out of 20)**
Beer producer 1	7	19	13
Beer producer 2	8	16	12
Beer producer 3	9	11	8
Beer producer 4	10	6	10

The data show that supply uncertainty is low for all the beer producers. The demand uncertainty is high for the first beer producer, at medium levels for the other two beer producers and low for the fourth beer producer. Lastly, technology uncertainty is at medium-low levels. The overall supply chain uncertainty is at high-medium levels for the first three producers and at low levels for the last producer.

Beer producer 1 has the highest level of supply chain uncertainty in comparison with the other beer producers, but its engagement in supply chain management is low. The first proposition and the literature argue that engagement in supply chain management is high when supply chain uncertainty is high. The research shows that this is not true in the case of Beer producer 1. Let us analyze the findings related with organizational culture and then analyze this contradicting result in more detail.

Organizational culture

The framework used to analyze the organizational culture is the competitive value framework of Cameron and Quinn (2011). After carefully analyzing each of the elements of the organizational culture for each producer, I concluded that Beer producer 1 has a clan culture, while the others have a hierarchical culture. The most important elements of the organizational culture for each beer producer are summarized in Table 5.

Table 5
Elements of the culture for each beer producer

Beer producers	Elements of the culture	Type of culture
Beer producer 1	Risk takers Teamwork Collaboration Low level of hierarchy	Clan culture
Beer producer 2	High level of hierarchy Formalized rules and procedures Risk takers High level of indulgence from work and society	Hierarchical culture
Beer producer 3	High level of hierarchy Individualism Formalized rules and procedures High level of indulgence from work and society	Hierarchical culture
Beer producer 4	High level of hierarchy High level of indulgence from work and society Formalized rules and procedures Individualism	Hierarchical culture

All four beer producers have organizational cultures with an internal orientation and their engagement in supply chain management is low. This finding does not contradict proposition 2.

The Albanian beer producers are facing high-medium supply chain uncertainty. To reduce it, they have to engage more in supply chain management. But this is not easy, as their culture imposes limits in the execution of supply chain management practices.

CONCLUSIONS

The Albanian beer producers are aware of the many benefits of supply chain management, but the cost of implementing the supply chain practices isnot justifiable, especially due to lack of customer education in this field. They focus more on the cost reduction aspect of supply chain management, so they seek supply chain partners that are reliable and help to reduce production costs.

The new business environment is facing more supply chain uncertainty, which can be attributed to three sources: supply uncertainty, demand uncertainty and technology uncertainty (Chen &Paulraj, 2003). The main source of uncertainty for the Albanian beer producer derives from demand, while uncertainty from the supply side is very low. Their suppliers always fulfill their requests and offer materials of consistent quality.

Albanian beer producers have cultures with an internal orientation, which imposes limits on the execution of supply chain management practices.

Contribution to theory and practice

This research has shown that a high level of supply chain uncertainty does not always lead to a high engagement in supply chain management, contradicting the literature. I found the reason for this contradicting result in the organizational culture, concluding that engagement in supply chain management cannot reduce supply chain uncertainty when organizational cultures are internally oriented.

As the research is focused just on four major Albanian beer producers, it is important to stress that the results must be handled carefully and not be generalized.

No study has been done before in Albania about supply chain management, and I think that the results of this research will be of high practical importance for Albanian beer producers. The next section provides some recommendations to help managers in dealing with supply chain management, taking into consideration their organizational culture and level of supply chain uncertainty.

Recommendations for managers

Based on the findings of the research my suggestions for the managers are the following:

Multiple sourcing versus single sourcing: We are living in an uncertain world, and it is better to have more than one supplier. Many companies keep one supplier to meet their normal demand of components and another supplier in case of a sudden increase in demand for components. Some companies rely on many suppliers, as they want to secure the flow of components. If something happens to one supplier, another supplier is available. But having many suppliers, means “destroying money and relationships”.Money is destroyed as you have to invest money to find and keep many suppliers. If you rely on many suppliers, you cannot build strong relationships with each of them. Before deciding to rely on one or more suppliers, analyze the competition to see if any of your competitors rely on the same supplier. If you share the same supplier with your competitors, it is necessary to create strong relationships with your supplier and to analyze the supplier market in case of any inconvenience by the supplier side.

Collaboration to detect the weakest link in the supply chain: Today many supply chains are global and complex, so it is difficult to monitor and manage them. If one part of the supply chain is weak, the whole supply chain will be weak. The best suggestion for quickly discovering the weakest link is collaboration and continuous information sharing with all the companies in the supply chain. By collaborating with all the members in the supply chain, you can help them to meet your objectives and also you will get to know them better. Companies need to collaborate in normal times and especially in difficult times. If you exchange real-time information about demand and supply with your members in the supply chain, you will notice immediately if something happens to them, and vice versa. A small problem can bring about big problems, so it is better to discover and solve problems immediately.

Understand your organizational culture: Companies have different cultures that sometimes help them to engage easily in supply chain management and sometimes impose limits. So it is suggested to understand the strengths and limits of your organizational culture. When you decide to engage in supply chain management, you have to consider these strengths and limits.

Engagement relative to the supply chain uncertainty: if suppliers become less predictable, demand will often change and the rate of process obsolescence will become high in the industry.It is time to think aboutinvesting in sophisticated mechanisms of supply chain management and to collaborate more with suppliers and customers.

Organize internally and then externally: the spirit of collaboration must exist first inside the company and then outside the company. If people in the company are not used to collaborating and working together as a team, it will be a waste of time trying to collaborate with other companies.

Customer satisfaction is the key driver of supply chain management: in this study Beer producer 4 would engage in supply chain management for reducing costs and for environmental reasons but not for increasing customer satisfaction. Satisfied customers buy more and may become loyal. This in turn will increase earnings that can be invested in supply chain management practices to reduce costs, increase profits and satisfy customers. There is a cycle that starts and end with customer satisfaction, the key driver of supply chain management.

Limitations and recommendations for future research

The results of this study are definitely relevant for Albanian beer producers. Further studies should expand the study in other industries.

Another limitation of the study is the focus on the focal company. Future research may focus on different companies in the supply chain, for example, the best case wouldbe to conduct a study on the aggregate supply chain.

The Albanian beer producer relies on one supplier for many products and they do not build strong and long-lasting relationship with them. Based on this finding, one interesting area for future research couldbe the problem of single sourcing versus multiple sourcing. The research will be useful in helping managers to understand if single sourcing or multiple-sourcing is the best option for their company.

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Appendix 1: Guide questionnaire

Part 1: SCM practices

A five point Likert scale, where 1= strongly disagree and 5= strongly agree; will be used to answer the questions.

Question 1: To what extent do you apply the following practices?

1. Tight linkages between customers and suppliers
2. Purchase order information tracking
3. Raw material cost, quality, and delivery tracking
4. Supplier/customer satisfaction measures
5. Finished goods visibility
6. Order entry and order-taking technology
7. Shipment tracking
8. Individual customers managed as accounts
9. Process control
10. Integrated quality information
11. Robotics
12. Sharing information about demand forecasts, promotions, price change, order status
13. Jointly making important decisions

Question 2: To what extent do the following reflect your reasons to engage in supply chain management?

1. Increased end-customer satisfaction
2. Improved profits
3. Secure reliable source/market for this item
4. Satisfy supplier/customer request
5. Reduce overall operating costs
6. Gain strategic market position
7. Reduce lead time
8. Price paid for item class
9. Improved productivity
10. Increase margins
11. Political
12. Regulations and tax implications
13. Environmental
14. Reduce product development costs
15. Local economy

Question 3: To what extent does this reflect your reasons for selecting a supply chain partner?

1. Is trustworthy
2. Has a high degree of integrity
3. Knows our business
4. Is reliable and consistent in dealing with us
5. Has a strong reputation
6. Supports the importance we give to customer service
7. Has potential synergy with us
8. Is committed to us
9. Improves our competitive market position
10. Offers us both economic benefit
11. Offers tax incentives
12. Offers environmental advantages
13. Provides political advantages
14. Reduces engineering changes
15. Helps us achieve workforce cost reductions

Question 4 (open question): What supply chain management practices do your company use in terms of:

- Collaboration with suppliers?
- Collaboration with customers?
- Information sharing?

Part 2: Environmental uncertainty measurement model

A five point Likert scale, where 1= strongly disagree and 5= strongly agree, will be used to answer the questions.

Supply uncertainty

1. The suppliers consistently meet our requirements
2. The suppliers produce materials with consistent quality.
3. We have extensive inspection of incoming critical materials from suppliers.
4. We have a high rejection rate of incoming critical materials from suppliers.

Demand uncertainity

1. Our master production schedule has a high percentage of variation in demand.
2. Our demand fluctuates drastically from week to week.
3. Our supply requirements vary drastically from week to week.
4. We keep weeks of inventory of the critical material to meet the changing demand.
5. The volume and/or composition of demand is difficult to predict.

Technology uncertainty

1. Our industry is characterized by rapidly changing technology.
2. If we don't keep up with changes in technology, it will be difficult for us to remain competitive.
3. The rate of process obsolescence is high in our industry.
4. The production technology changes frequently and sufficiently.

Part 3: Culture influence

Open questions

Please describe how the following items are present in the firm's culture:

1. Power distance
2. Innovation
3. Uncertainty avoidance
4. Individualism
5. Internal versus external orientation
6. Indulgence

Green Growth in the OECD: State of the Art

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SUMMARY

The concept and initiative of green (world) economy but especially the greening of industry is not new. It appeared 20 years ago at the Rio World Summit, and since that time it has been discussed constantly, integrating more new and complex approaches, but particularly gaining focus in context with the increasing negative environmental impacts and global warming. As the advanced economic globalisation and acceleration of trade has increased the degradation of environment (damages and risk), a new strategic orientation became essential. That was the reason why a proposal at the Rio+20 World Summit initiated global environmental governance for the first time (Biermann et al. 2012). At the same time, requirements and expectations escalated to develop a green but even more a blue economy (Paoli 2010). But as the analysis of country statistics has shown, the level and status of the greening varies by countries. With the comparison of the green index and the FOI indices (Bartha - Gubik 2013a, Bartha – Gubik, 2014c)) those countries can be identified which have already made great progress in this matter and should thus be a good example to follow.

It is well known that growth theories examine, analyse and explain the phenomenon and main factors of development, but they tend to consider only the economic aspects of growth, explaining and categorising the triggering factors into inside and outside factors, without giving any characteristic role to the natural environment in development. However, experts of sustainability and leading representatives of ecological economics have pointed out that the three pillars of development, based on the key issues of social well-being, should be complemented with the aspects of sustainability. This paper summarises the main steps, results and bottlenecks of the way towards green world economy.

Key words: Green growth, green index, eco-innovation, development, sustainability
Journal of Economics Literature (JEL) code: Q20, Q56

INTRODUCTION

The concept of green economy has been generally accepted in 2009, when the United Nations Environment Programme (UNEP) Environmental Management Group discussed how the United Nations could provide a more coherent and effective support for countries to help them in the transition toward a "green economy" (EMG/SOM.15/02). Since then the term "green economy" is increasingly used, without having been properly defined or given any common understanding of the conceptual issues underlying the term.

The green economy was a direct response to the occurring environmental changes and can be considered as a possible pathway to ground and reach economic recovery and sustainable development, which have to be integrated into the various sectors of society after the financial and economic crisis. Not only UNEP and OECD, but the World Bank, WTO and IMF support the concept of green economy; in addition, its acceptance is wide at governmental levels, too. Measurement of the 'greening of economy' has become a debated topic and a researched issue in the past decades as well.

What is the green economy?

We can find various terms for green economy. Basically, the green economy is sustainable development combined with the principals and findings of industrial ecology (Opschoor 1995). UNEP defined it as a sustainable economy and society with zero carbon emissions and a one-planet footprint where all energy is derived from the renewable resources. It envisages an economic growth (income and employment) that is driven by public and private investments that reduce both carbon emissions and other pollutants and also energy demand.

"The green economy is not a freebie. It is costly but it is much less costly than not doing it, but it is a politician's nightmare to try and sell short-term costs in order to avoid the long-run costs. Politicians are too scared of asking people to pay" said Sachs (2010). The transition towards green economy requires investments of at least 5 trillion USD per year between 2010 and 2030 by WEF (2013) to BAU scenario, which is probably less than the cost of externalities. The green economy will result in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities (Burkart 2009). It is an economy concerned with being environmentally sustainable, socially, just locally rooted, as said by Bapna & Talberth (2011) and Danaher (2012). The green economy rigorously applies the triple bottom line on the people (GEG, Green Economy Group, http://greeneconomygroup.com/company/green-economy-definition/), planet and all profit-oriented organisations, across all corporations at the microeconomic level and throughout the entire economy at the macroeconomic level.

The documents of GEG determine its main characteristics and its industrial representatives.

The green economy supports the transition towards a sustainable, carbon-neutral economy by having green entrepreneurs and green jobs. It is a new model of creating new jobs and sustaining the economic development (Pop et al. 2011). The model of Gouvea et al. (2012) introduces the green sustainable resources in addition to the traditional triple helix of industry – academia, government and private companies – revealing the significance of geographical clusters and factor endowments on green competitiveness in the global economy. Carfì and Schilirò (2012) address the climate change policy and diffusion of low-carbon technologies to reach the green economy. The Global Environmental Governance (GEG) highlights the sum of the following factors in an effective and preventive environmental protection system: organisations, policy and financial instruments and regulation tools (standard and norm).

Indicators of Green growth

The Green Economy Initiative (GEI) of UNEP (2009) provides analysis and guidance for countries on policy reforms and investments to support them in achieving the green transformation of key sectors of their economy. The first report of the GEI demonstrates "Towards a Green Economy – the main output of the Green Economy Initiative – demonstrates that the greening of economies is not generally a drag on growth but rather a new engine of growth; that it is a net generator of decent jobs, and that it is also a vital strategy for the elimination of persistent poverty. The report also seeks to motivate policy makers to create the enabling conditions for increased investments in a transition to a green economy in three ways (p. 3)."

After the first Green Economy Report (OECD 2011) the OECD also published its own green strategy and measurement guidelines in 2011. According to this report, the sources of green growth are the following: productivity, innovation, new markets, confidence, stability, resource scarcity and imbalances. The applied indicator set represents the main elements of green development, covering the field of production, natural environment quality and resources, consumption, trade and policies and their interactions. Both the UNEP and OECD use similar indicator sets and topics. The framework and methodology of the measurement was determined by the OECD. The goal of the measurement agenda is to develop an environment-economy accounting framework so to maximise consistency and international comparability.

Table 1
Selected green indicator groups and topics

Indicator groups	Indicators
Environmental resources, economic productivity	Carbon and energy productivity Resource efficiency: material, nutrients, water Multi-factor productivity
Natural assets	Renewable stocks, Non-renewable stocks Biodiversity and ecosystems
Environmental dimension of the life quality	Environmental health and risks Environmental services and amenities
Economic potentials and policy responses	Technology and innovation Environmental goods and services International financial flows Prices and transfers Skills and training Regulation and management approaches
Socio-economic context and characteristics of growth	Economic growth and its structure Productivity and labour market, education, income Socio-demographic patterns

Source:
http://www.oecd.org/greengrowth/greengrowthindicators.htm

The indicator groups content sets of different indicators. The first set contains 23 indicators, and is currently the largest. Green innovation in the form of patents can give us a good picture about the greening of the economy. The largest number of green patents arise in material science (Figure 1). In Hungary the most characteristic sign of green growth is well represented by the number of the green patents (Figure 2). The number of green patents were the highest in 2007, what are considering with the supplement of government.

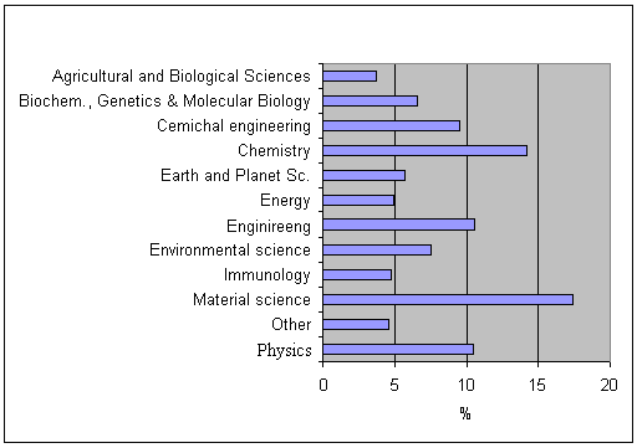

Figure 1. Patents related to green technology, 2000-2007, global data (total patent =100%)
Source: http://www.oecd.org/greengrowth/48012345.pdf page 12

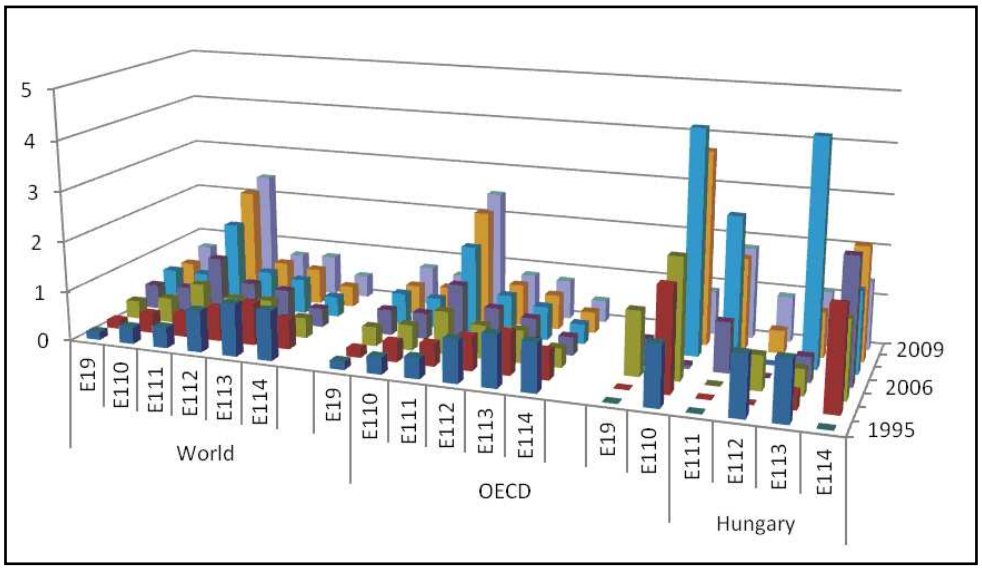

Figure 2. Patent types by sector – as a percentage of total patents (%)

Additional information: E19: electric & hybrid vehicle; E110:electric efficiency - building & lighting; E111: RES; E112: air pollution; E113: water pollution; E114:waste management
Source: OECD database, 2012

Progress in Green economy monitoring

The OECD maintains several databases in addition to the formerly mentioned indicator groups, and has statistical data for green growth since 1995. Beside these, OECD regularly monitors the progress and status of green growth through the specified green growth indicators.
"The framework of Green economy indicators comprises the following three principal areas:

- *"Green transformation of key sectors and the economy"* focusing on investments in a green transformation of various economic sectors and their associated share in output and employment.
- *"Decoupling and Efficiency"* assessing resource efficiency and productivity, and the decoupling of economic activity from resource use and related environmental impacts, at both sector and economy-wide levels, building on the outputs of the International Resource Panel.
- *"Aggregate indicators of progress and well-being"* referring to various initiatives on overall measures of economic progress and well-being, including poverty alleviation and natural capital depreciation.

Depending on the level of economic development and natural resource usage ratio, countries may choose to prioritise different sets of indicators." (http://www.oecd.org/greengrowth/greengrowthindicators.htm)

We must consider also all new fields that have been identified and analysed in the last years (Green growth and sustainable development http://www.oecd.org/greengrowth/greengrowthindicators.htm):

- Environmental performance and resource productivity – the report has been focusing on the measurement of material flows and resource productivity;
- Trends in energy usage and efficiency mainly related to the Clean Angel Plan of the Action for Climate Change;
- Technology developments and innovation - where the focus is on indicators which support the OECD Innovation Strategy, and on an indicator toolkit which promotes and monitors sustainable manufacturing at corporate level;
- Environmental performance of agriculture was monitored with the measurement of agricultural producer support;
- Monitoring of international transfer;
- Sustainable development - the measurement of different types of capital with an emphasis on human and social capital;
- Wellbeing and progress – the OECD aimed at implementing the recommendations of the Stiglitz-Sen-Fitoussi Commission with an emphasis on well-being and sustainability.

– In addition, the OECD maintains further databases on a wide range of other topics that play an important role in characterising economic growth and its outcomes. Examples include: national accounts, international trade, balance of payments, prices and taxes, productivity, government debt, employment, education and health. Some countries of the world have already applied the measurement of green growth in practice (e.g.: the Netherlands, the Czech Republic, South Korea, Costa Rica, Latin American countries) with the support of OECD or UNIDO.

AN ALTERNATIVE MEASURING THE TRANSITION TO GREEN ECONOMY

Applied methodology

Unlike many different indicators introduced above, our aim is to introduce an index that can be capable to measure, express and at the same time compare the state and progress of the countries toward green economy. To complete this mission the methodological development of a complex, integrated index is necessary that can enable us to obtain a more comparable measurement unit expressed as a sole number or scale. For this purpose we developed the green index (Gi) (Bartha-Gubik-Tóthné 2013a), which is a composite index calculated by the two following steps.

1) Firstly we determined the indicator index and set the scale between a minimum and maximum value of each green indicator in OECD countries:

$$I_i=(X_i-X_{min})/(X_{max}-X_{min})$$

where I_i is the indicator index

X_i the observed indicator;

X_{min} the minimum value of the observed indicator in OECD countries;

X_{max} : the maximum value of the observed indicator in OECD countries;

This step was a dimension exemption. The indicator index (I_i) value is represented by a value ranging from 0 to 1.

2) Secondly we calculated the Green index (G_i) of countries, which is calculated with the average of all green indicator indexes of the observed country.

$$G_i = \sum_{i=1}^{n} I_i/n$$

The calculation was made for two years: 2005 and 2008.

Green index in the OECD countries

Based on this methodology we calculated the Green index of all OECD countries (results are shown in Figure 3). If a country performs well in the transition to a Green economy, the green index is near to 1. Considering the results of all countries, we can easily to give the conclusion that there are no countries above the value of 0.50. For 2005 Norway has the highest value, with 0.48, and second best is case of Greece, with 0.44, but in 2008 Norway (0.44) and Sweden (0.40) have the best Green indexes.

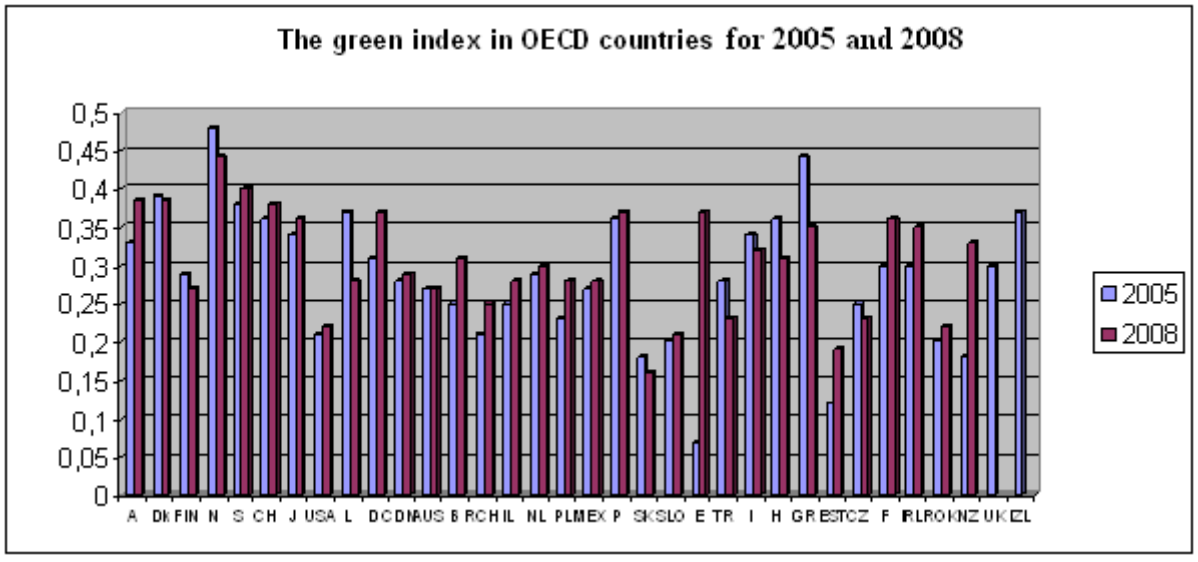

Figure 3. The Green index in the OECD countries
Source: Bartha-Gubik-Szita Tóthné 2013

According to the Green index, the countries with the greenest economies were

- in 2005: Norway, Greece, Denmark , Luxemburg and Iceland;
- in 2008: Norway, Sweden, Austria, Denmark and Luxemburg.

In 2008 the greening process stagnated or increased in one-third of the countries, compared to 2005 figures, most probably because of the financing economic crises. So based on the Green index we can state that in the examined period the green growth and green performance of the OECD countries was not significant.

Connection of the Green index and FOI model analysis of the OECD countries

We compared the green performance of the OECD countries with the values of the FOI index (Bartha & Gubik, 2013a). Our hypothesis is that we could determine a new alternative developing way on base of these indices.

The FOI model analysis was a multi-stage statistical method. The FOI model is based on a three-dimensional structure. These three dimensions are (Bartha – S. Gubik, 2014a):

➢F, i.e. the future potential of a country;

➢O, i.e. the outside potential of a country;
➢I, i.e. the inside potential of a country.

All three dimensions are complex, composed of a large scale of factors. Yet they can still be clearly distinguished from each other, which is useful because the clear distinction can help in the formulation of distinctive development strategies. The future potential includes factors that are regarded to be crucial for the sustainability and future competitiveness of the given economy, in this case the Hungarian economy. The outside potential includes factors that are crucial to the current world market position of Hungary (Bartha – Gubik, 2014b). The inside potential is made up of factors that are regarded to be crucial to the current well - being and development of the country (Barta & Gubik 2013b).

Table 1
Relationship between Green index (G_i) and Future (F_i), Inside (I_i) and Outside (O_I) potential of the OECD countries

Index/country	**Austria**	**Denmark**	**Finland**	**Norway**	**Sweden**	**Switzerland**
Fi	4.7	4.8	5	5.2	5.1	5.4
Oi	5.41	5.77	5.72	5.7	5.22	5.37
Ii	4.05	4.3	4.02	4.13	4.13	4.89
Gi	0.385	0.385	0.27	0.44	0.4	0.38
Index/country	**USA**	**Belgium**	**Germany**	**Canada**	**Australia**	**New Zealand**
Fi	3.8	3.9	4.3	3.9	4.2	4.2
Oi	4.27	5.56	5.26	5.41	5.32	4.52
Ii	4.47	3.47	3.73	4.5	4.35	4
Gi	0.22	0.31	0.37	0.29	0.27	0.33
Index/country	**Israel**	**Estonia**	**Poland**	**Mexico**	**Portugal**	**Slovakia**
Fi	3.6	3	2.9	2.7	3.5	3
Oi	4.89	4.94	4.42	3.98	4.33	4.82
Ii	4.13	3.08	3.07	2.85	2.91	3.25
Gi	0.28	0.19	0.28	0.28	0.37	0.16
Index/country	**Spain**	**Turkey**	**Italy**	**Hungary**	**Greece**	**Czech Republic**
Fi	3.4	3.3	3.5	2.9	2.9	3.1
Oi	4.23	3.63	3.82	4.56	3.66	4.97
Ii	2.99	3.14	2.66	2.55	2.5	3.57
Gi	0.37	0.23	0.32	0.31	0.35	0.23
Index/country	**France**	**Ireland**	**Korea**	**Luxemburg**	**UK**	**The Netherlands**
Fi	4.4	3.9	4	5.3	3.9	4.4
Oi	4.46	4.17	4.26	6.56	4.35	5.54
Ii	3.04	3.91	3.33	4.45	3.6	3.83
Gi	0.36	0.35	0.22	0.28	0.3	0.3
Index/country	**Japan**	**Chile**	**Slovenia**	**Iceland**		**Average**
Fi	4.8	3.8	3.4	5.9		4
Oi	3.68	5.03	5.08	2.33		4.74
Ii	4.01	4.13	2.7	4.42		3.65
Gi	0.36	0.25	0.21	0.37		0.306

Sources: Gubik & Bartha 2013a, and own calculations

Based on the comparison of the indexes, those countries show a strong future potential and green growth for which the Future index is above 4.7 (average Fi: 4.0) and the average Green index is above 0.35 (average Gi: 0.306). These countries are (Figure 4):

Austria (4.7; 0.385),
Denmark (4.8; 0.385),
Norway (5.2; 0.44),
Sweden (5.1; 0.4),
Switzerland (5.4; 0.38),
Japan (4.8; 0.36) ,
Iceland (5.9; 0.37).

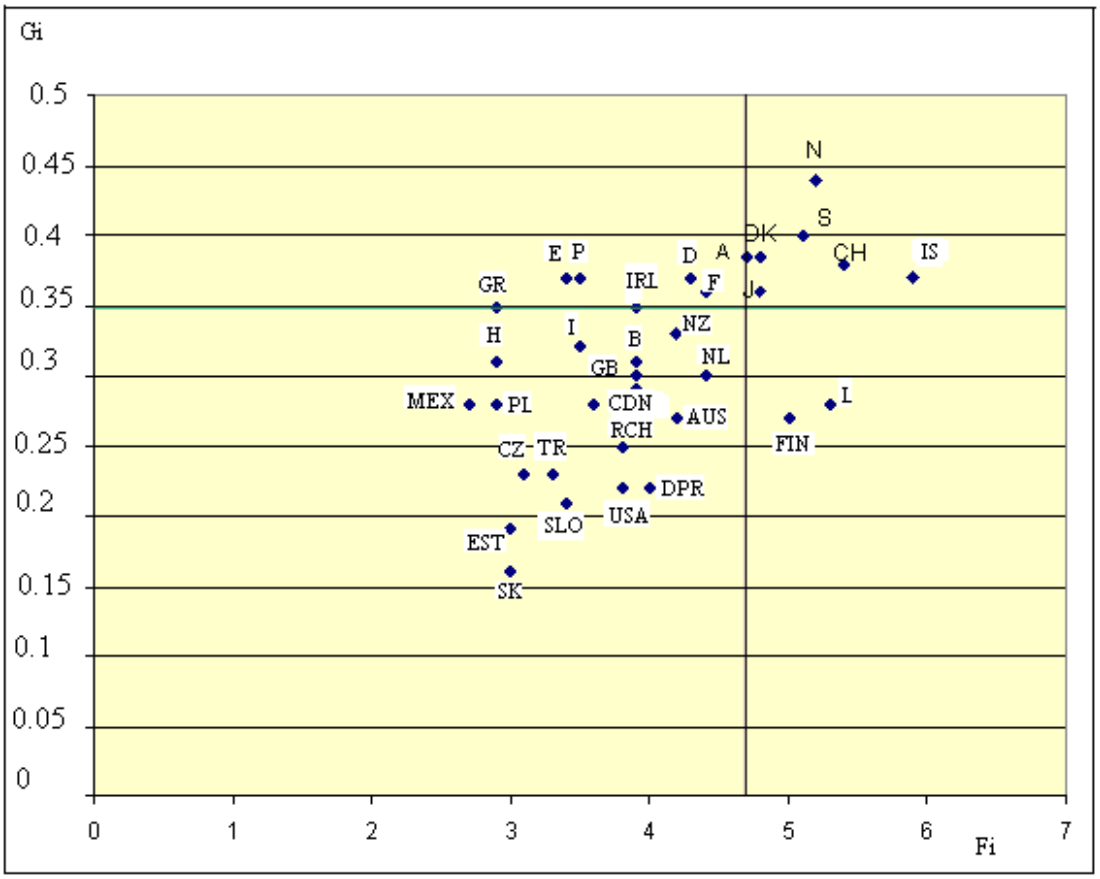

Figure 4. Relationships between the Future index (Fi) and Green index (Gi)

Some countries have relatively good green performance (G-index> 0.35) while their Future index value is less than 4.7 (Iceland, Japan, France, Ireland, Czech, Spain, Portugal or Greece, where the F-index is the second lowest value).
The analysis of the relationship between the Outside index and Green index is considered for greening countries. If the O-index is >5.0; and G-index >0.35; (average values: O-index: 4.74, G-index: 0.306), we consider a country to be greening. So the following countries are greening:

Austria (5.41; 3.85),
Denmark (5.77; 0.385),
Norway (5.7; 0.44),
Sweden (5.22; 0.4),
Switzerland (4.89; 0.38),
Germany (5.26; 0.37).

Luxemburg has the highest value of O-index, but the green performance is lower than average; (6.56; 0.28). The following countries also have relatively high O- and G-indexes: France (4.46; 0.36), Spain (4.23; 0.37), Portugal (4.33; 0.37) are near to the greening group, but because of the lower F_i and I_i they are not members of the green group. Iceland has good green performance but its O-index is very low (2.33; 0.37).

The relationship between the Internal index and Green index index was examined in case of those countries where the internal potential has an index higher than 4 and the Green index is higher than 0.35 (averages: I-index: 3.65, G-index: 0.306). Accordingly the following countries seem to be green:

Austria (4.05, 0.385).
Denmark (4.3; 0.385).
Norway (4.13;0.44),
Sweden (4.13; 0.4),
Switzerland (4.89; 0.38),
Japan (4.01; 0.36),
Iceland (4.42, 0.37).

Finally we chose the countries which were in all three groups as the best practice of green growth: Austria, Denmark, Switzerland, Norway and Sweden.

How far is the world from green economy?

Our research showed that the OECD countries are moving in the direction to reach Green economy, but they are relatively far from it. We chose countries which were on the top of the three comparisons and we proposed these 5 countries as the best practices of green growth on the basis

of the relationship between the FOI and Green indexes. The countries are Norway, Sweden, Denmark, Austria and Switzerland. All of these countries preformed well not only in green growth, but they were on the top in other development models too, which is shown by the deeper country analysis and FOI model. We can say these countries are modelling green development based on eco-innovation.
As we could see, the interpretation of green economy differs in several features of conventional economics. While conventional economics only theorise about economics, green economy has a much more profound view and is integrated with the principals and statements of various natural sciences, including ecology. Thus we are able to achieve the study of the economy from a natural and social point of view.

Ecological economics argues that human capital and manufactured capital are complementary to natural capital and substitution is not possible, since human capital and manufactured capital result inevitably from natural capital in one way or another. Ecological economics studies how economic growth is related to the increased exploitation of material and energy inputs. Ecological economists also argue that a significant part of those factors which determine human welfare cannot be examined from a strictly economic point of view, suggesting the multi-disciplinarity of the social and natural sciences as a means to address the study of economic welfare and its dependence on services provided by nature.

Is it an important question to decide whether green economy is a dream or reality? What do the world statistical data show about world development? The IPAT[2] form of Chertow (2001) pointed out that the global environmental load has increased, because the world population has already exceeded 7 billion, the world economy has quadrupled, and the ecosystem services have been degraded.

The world atlas prepared by SERI (2012) comes to the following conclusions:

- Global material consumption has doubled within the past 30 years. Mankind is becoming more and more dependent on non-renewable materials such as fossil fuels, metals and minerals.
- The world is out of balance: 18 countries consume more than three quarters of global resource use while the 100 least-consuming countries are only responsible for the 1.5 percent of the resource usage.
- An average Austrian consumes 10.2 tons of resources a year while people in most of the other countries consume much less.
- Never before in mankind's history have so many resources been traded globally: in the the future Europe will have to face increased competition in the market for raw materials – mainly fossil fuels and metals.
- The high living standard (wellbeing) in Europe is significantly based on the raw materials imported from other continents – including all the negative impacts on those regions.
- Across all categories, Europe is the country most dependent on resource imports.

The current state of worldwide urban development is depressing. It has not been moving toward sustainable design and the consumption has not been reduced quickly enough. If the goal is to achieve zero emissions, first of all the attitude and behaviour of mankind should change significantly to decrease the resource consumption and to reach higher efficiency (IEA 2013).

The energy sector presents a particular challenge in which to achieve green growth, mainly because of its size, complexity, path dependency and reliance on long-lived assets. Green development has been built on eco-innovations which at the same time can reflect the developing economic results and the preservation and stabilisation of biodiversity. Parallel with these multicultural values are assumed as well: a high degree of solidarity and respect for one another.

The Green Development Initiative is aimed only at the stability of land use and biodiversity by allowing the stakeholders to be responsible for land use in their territory, especially paying attention to biodiversity.

Green development is based more on eco-innovation than green economic growth. Green development would like to increase employment through an environment friendly economy and by reducing chronic poverty. Eco-innovation has an impact on the economy, society and the element of natural environment. It will appear in the stimulation of development along three dimensions as goals, mechanisms and effects.

FINAL CONCLUSION

The transition to green economy results in structural change and some economic benefits are also considered to follow: increase of exports to developing countries, growth in case of environmental goods and services, growth of GDP (Cosbey 2012). But there are some risks as well.

The United Nations Conference on Sustainable Development, also known as Rio+20 or "Earth Summit 2012", was the third international conference on sustainable development aimed at reconciling the economic and environmental goals of the global community. The Rio+20 Conference was the 20-year follow-up of the 1992 Earth Summit. The main objective of the summit was to create a focused political document designed to shape global environmental policy. The two main discussions were: (1) how to improve international coordination for sustainable development by building an institutional framework, (2) and how to build a green economy to achieve sustainable development and lift people out of poverty, including support for developing countries that will allow them to find a green path for development.

[2] **I**mpact = **P**opulation *__A__ffluence (consumption/person)*__T__echnology (impact/consumption)

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