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Features of the functioning of the domestic borrowing market in the United States

Annotation. The article examines the foreign experience of government borrowing and analyzes their forms, tools and methods of engagement. The analysis of the state debt and the features of the debt policy are determined. Singled out the main features of the functioning of the domestic borrowing market in the USA.

Key words: state borrowing, budget deficit, US state debt, treasury federal borrowings, municipal borrowings of local self-government bodies.

The present stage of development of the global world economy characterizing by the development and integration of financial relations of different countries of the world. There is a lack of financial resources for the effective development of countries and overcoming the effects of the global financial crisis. The governments of countries always forced to seek additional sources of money attraction through government borrowing {1}. Therefore, an important task is the study and analysis of foreign experience, the process of government borrowing and debt policy.

Despite the large number of scientific studies devoted to highlighting this topic, it remains relevant, as the use of US, experience in attracting debt capital will enable the government to pursue an effective debt policy. At the same time, there is no comprehensive and systematic analysis of foreign experience in terms of elements of the system of financial and economic mechanism for regulating public debt.

The main objective of this work is to study the main aspects of debt settlement in the United States to improve the efficiency of government domestic debt management.

Domestic borrowing in developed countries of Europe and the world is one of the key places in solving budget deficit problems, and largely – in project financing of the relevant sectors, sectors, areas of the state economy and the problems of individual settlements and enterprises of state and local importance in particular. One of the flagships in this process is the United States of America, where the system of domestic state borrowing has gained special significance in the securities market, reflected in the effective system of functioning treasury and municipal debt securities of the United States {2,3}, without appropriate control system {4}.

The markets for government borrowing in developed countries have the following characteristics that distinguish them from the corporate market and allow them to attract a wide range of investors: low credit risk, high liquidity and prefer-

ential tax treatment. Low credit risk means a small reality of the emergence of a situation that will not pay the lender the amount invested by them in government bonds. The administrative and legal authorities of the state in the person of his government provide government loans. Government borrowings always have higher rating ratings compared to corporate issues and in most developed countries rank higher in rankings. In most countries, interest income on government securities has a preferential tax treatment, and in many cases is not taxed at all. Therefore, in the United States, government bonds are not subject to tax at the state level. The above characteristics have led to greater security of transactions with government securities for investors, compared with corporate issues. However, the need to regulate the government securities market not only persists but increases substantially at this time. In this regard, it is necessary to find out which model of regulation provides optimal results [5].

There is a view that the United States Government bonds considered the most reliable investment instrument in the world. US bonds are crucial for the global stock market: potential risks and potential returns estimated based on the situation on US bonds. As you know, the lower the risk on the instrument, the lower the profitability. The United States has the highest AAA credit rating. Regarding to this, when the profit is working in compilation with US government bonds in low level it will not satisfy all private investors.

The growth of US public debt at a rapid pace has led to the fact that today the country is considered one of the leaders of the countries in the state borrowings, which is due not only to crisis processes at the world level. First of all, the growth of the state borrowing market is due to the growth of the budget deficit due to significant military expenditures, reduced tax revenues to the budget, increased social payments, reduced federal budget revenues, increased unemployment benefits, and increased costs for developed packages of economic incentives. Thus, despite the fact that the US economy is one of the most powerful in the world, the need to finance a budget deficit due to these reasons, causes an increase in the ratio of public debt to GDP of the country. At the same time, the growth of public debt in Ukraine by 633.64% is due to the lack of medium and long-term budget planning, fiscal policy insubordination, volatility and unsystematic government policy on government borrowing.

On the US bond market, several types of securities are traded. Among them, the most popular are:

- Treasury bills issued for the term of 3, 6 and 12 months. Profitability for these instruments is formed by selling secu-

rities at a discount to the nominal price. The discount rate is a discount of 360 days. For example, a bill with a nominal value of \$ 10,000, whose term ends in 360 days with a discount of 0.46, will be sold at a price of \$ 1,995;

- Treasury notes are medium-term government debt instruments (2 to 10 years), on which investors pay a fixed interest;
- Treasury US bonds issued for a term of 10 years involve the payment of coupon income. Under coupon long-term bonds, the investor pays an aggregate interest equal to the coupon rate, while the US Treasury pays half of the coupon rate every 6 months

A separate type of US debt bonds are TIPS – bonds protected from inflation. In addition, there are non-standard issues of securities: Cash Management Bills (short-term bills, used by the government of the country in case of extreme necessity and characterized by higher coupon payments), 20-year bonds. Typically, volumes of non-traditional bond sales are significantly lower than monthly tranches for 3-year and 10-year bonds. US mortgage bonds are property-backed securities that make them even more attractive in terms of reliability [6].

The common feature of all US treasury securities is their high credit rating, the availability of tax privileges (exemptions from state and local income taxes), high levels of liquidity and reliability at a low level of income. At the same time, they all have the character of debt instruments and are used to finance public debt. In this case, it is not about the target nature of the issuance of treasury securities and the direction of attracted funds to finance investment projects. This is due to the specifics of the political system of the United States and the transfer of a significant number of powers to individual states, which at their discretion dispose of borrowings in the stock markets. The same applies to bonds of federal agencies (Agency Bonds) placed by individual government agencies and government financial corporations. Such bonds have the support of the government, but they are not guaranteed, as such issuing institutions act as private entities. Despite sufficient liquidity, a higher level of income (compared to treasury securities), the availability of tax privileges (exemption from state and local taxes, but not federal ones), and this type of debt securities does not involve borrowing for project financing. Their purpose is to attract the support of the respective circle of voters (farmers, students, etc.) and to ensure their current expenses [7].

The American market demonstrated the credibility and benefits of market principles of government securities market management. In practice, even the largest European markets in the primary market were dominated by non-competitive ways of placing public liabilities (syndicate, closed tendering), the institution of primary dealers was absent, and responsibility for placing the issues in the primary market was reliant on central banks. Secondary markets were not permanent, and in some countries (in Spain), most were absent, so the use of government securities transactions for monetary regulation of the economy was complicated. Recently, after the implementation of reforms, almost all European countries, the differences

in the regulation of markets of government obligations are increasingly disappearing [5].

In addition to federal government bonds, there is another type of securities issued by state governments, territories (for example, Puerto Rico) or other departments or government agencies that are not federal (city municipality, local government). These securities are called municipal (municipals) (although, as stated, they are not always issued by the municipalities themselves) [8].

Municipal bonds market consists of two parts: the primary market and the secondary market. The primary market is the market for the placement of newly issued bonds. The secondary market is a market in which municipal bonds are sold after they have been sold underwriter, and by the time of repayment. The existence of a secondary market gives bondholders the ability to easily convert bonds into cash (that is, provides liquidity of bonds). The degree of liquidity of securities – this is a question that investors always pay attention to, and if the liquidity is high, then such bonds are valued higher [9].

The vast majority of the US municipal debt market is currently calculated based on the issuer's creditworthiness. The financial condition of the municipalities has shaken due to the recent recession. The issue of determining the level of creditworthiness is now a more important factor in the investment process than at any time in the last two decades. To determine creditworthiness, they use two different methods: the first is to assess the issuer's default probability, and the second to determine the appropriate credit spreads that are based on the analysis of a specific issue of the issuer, taking into account the relevant credit rating and market environment. The probability of default according to US Federal Reserve data for the municipal market is not significant [10].

Municipal debt bonds in the United States can be divided into two main types:

1. The General Obligation Bond is a municipal bond, interest payment and principal, which is secured by the total income potential of the issuer, usually tax revenues.
2. Revenue Bond is a municipal bond, the revenues of which are payable at the expense of revenues from the investment project for which it was issued (for example, stadium construction financing, bridges, hospitals, etc.). At my opinion A. Batuyeva offers more opened definition of this financial instrument: «Bonds secured with receipts are bonds issued by public-legal entities (state, municipality) and / or public legal entities (legal entities based on public-law education or statutory the capital of which it predominantly participates, as well as legal entities that perform any public functions (on the basis of an agreement with public-law formations or a license)» [11].

Of particular note is the second type of borrowing. They are issued based on revenues from projects implemented by municipalities: transport, housing, educational, infrastructure, etc. The source of payment in this case are payments to consumers of services, for example, for the use of public utilities, water, electric (userfees), or payment for the use of roads, parking lots, etc. (tools, concessions, fees). The share of revenue

bonds is very significant and amounts to about 60-70% of the total volume of municipal borrowings. Issued also bonds for the development of industry and other activities, which provide for benefits from taxation of income on securities. We note that in order to solve the problem of the construction of low-cost municipal housing in the United States, housing bonds issued by the state government or the government department of the state responsible for housing construction are actively used. Funds received as a result of the issue are issued in the form of a loan to the developer. Subsequent repayment is carried out at the expense of the rent, levied on residents. In the case when the share of housing remains undistributed, the developer has the right to implement it on the open market and pay the debt of the municipality (or state). Usually this scheme applies to housing construction for families with low and middle income, for the first time they buy their own housing [12].

In the US stock market, local bond yields are always higher than government bond yields. This is understandable, because by its nature local bonds are considered more risky than state-owned ones. In order for local bonds to be attractive for investment, it is necessary that their income is higher than the yield on government bonds [13].

In addition to bonds with a general guarantee and bonds for income, distinguish between combined bonds or, as they are called, with double-barreled bonds. Such securities are provided with the reputation and overall financial status of the issuer, as well as the proceeds from the project, which is financed by the issue of bonds. Along with a bond with this level of protection in the United States, the issuance of bonds with a moral guarantee – that is, issued by a state or a municipality – and which contains only a moral obligation to pay principal and interest, is also practiced. It is clear that the level of income for such securities is higher. It is also worth mentioning about such specific securities as the Municipal Improvement Certificate – a valuable paper of local authorities issued for financing public projects and is repaid at the expense of tax revenues from those interested in the implementation of these projects [14].

Also, industrial development bonds (ODA) in the United States, which are referred to as «municipal bonds for the needs of the private sector» in the 1986 Tax Reform Act, are bonds issued by a state or municipality government to finance the non-budget sector. In general terms, the purpose of issuing bonds of industrial development is to stimulate economic development. Typically, revenues from the ODA issue are directed at the construction of such facilities, the operation of which corresponds to both private and public interests – for example, the creation of new jobs or the strengthening of local tax base at the expense of the multiplier effect produced by the growth of municipal orders to the local economy.

In general, municipal bonds in the US are characterized by the majority of the same features that are inherent in other fixed income securities. However, there are at least three features (except for the issuer type) of municipal bonds that distinguish them from other instruments of the class of fixed income assets:

First of all, it is a tax-free status, which is often granted to income from municipal bonds at the national level. It is believed that this feature is the main stimulant of investment in municipal bonds in the United States. In general, the municipal bond market in the United States is the largest in the world, both in absolute terms (about \$ 1.5 trillion) and in terms of the specific weight in the domestic debt securities market (about 11%).

Secondly, municipal bonds often have a lot of repayment dates, that is, they are issued in serial bonds (serial bonds). Although they are considered and registered as a single issue, in fact, these are several separate issues, securities that are not interchangeable and traded separately [15].

If we talk about the share of municipal bonds markets in the aggregate volumes of domestic bond markets, then two points should be noted: 1) this share is small (the maximum is 10-11% in the USA) and 2) this share in most countries is decreasing.

Agree with I.P. Petrenko points out that various types of government borrowings in the United States, issued by the state and certain territorial units, have shown that in the arsenal of these entities there are several effective instruments for financing investment projects. Treasury securities, as a rule, do not have the specific purpose of attracting investment resources, borrowed funds are directed to cover the costs of the state budget, so here we can only talk about the indirect financing of state investment measures. At the same time, municipal debt securities are more in line with the above requirement. The local authorities of the states and settlements are actively practicing the issue of bonds to attract investment resources. Bonds under income occupy a key position among municipal debt securities. The reason for this should be seen in the nature of bonds for incomes protected not only by guarantees of local authorities, but also backed up by revenues from the implementation of investment projects. The funds attracted from their emission are used for their intended purpose – to implement socially useful plans, revenues are partially devoid of tax burden, and the risks associated with the implementation of projects, lead to a relatively high level of return on bonds.

Thus, the peculiarities of functioning of the domestic borrowing market in the USA consist in segmentation of this market in the framework of two main components: treasury federal borrowings and municipal borrowings of local self-government bodies. Typical features of treasury federal borrowing are their purpose – borrowing to meet budget needs, while they are characterized by high financial capacity and significant reliability for the borrower within the framework of effective state guarantee programs. However, municipal borrowings, with the purpose of financing specific social and economic projects, are represented by several groups of bonds: bonds with a general guarantee, bonds for incomes, combined bonds, industrial development bonds. The specified segment of the market of domestic state borrowing involves the financial provision of specific investment projects and is provided either by tax revenues from local budgets, or as a percentage of the profit of investment projects, as well as a combination of these two means of collateral. The effectiveness of municipal borrowing is illustrative and is an important tool for providing those sectors of the

economy that are outside the federal government, while being the most socially driven projects.

The mechanism of the formation of US public debt traces the specific features and features of this process, but one can identify a general evolutionary scheme under which accumulating obligations and general methods and instruments for debt settlement, resulting from the accumulated world experience in solving debt problems, can be identified. The current situation in the field of US government borrowing is characterized by a balanced policy and the transition to the use of active debt management methods to reduce the cost of its maintenance. The process of government debt management is at the stage of transition to a single system, which includes unified and multifaceted elements of government debt regulation. An integral part of a public debt regulating system should be debt planning, which is organically combined and implemented on the basis of a common methodology with budgetary and macroeconomic planning. Based on the study of foreign practice in solving the debt problem, one can distinguish the following areas of improvement of the mechanism for regulating public debt:

- definition and legislative consolidation of the direction of the debt strategy, in particular regarding the ratio of the internal and external components of government borrowing;
- establishment of a public debt management agency that is accountable to the Ministry of Finance and focused on debt risk management;
- development and implementation of a medium-term program for regulating public debt as an element of the structure of an effective system for planning public indebtedness.

CONCLUSIONS

In Ukraine, one can use the experience of the USA, which consists in segmentation of the internal borrowing market by components: treasury federal borrowings and municipal borrowings of local self-government bodies. In this case, special attention should be paid to non-state and non-municipal borrowings, which are guaranteed by the relevant authorities and local self-government bodies. In this case, treasury federal borrowings are used only to meet budget needs and are characterized by high financial capacity. Feature of municipal borrowing is the financing of specific socio-economic projects, bonds for income, combined bonds, bonds for industrial development. The specified segment of the domestic government borrowing market provides financial support for specific investment projects and is provided either by tax revenues from local budgets, or as a percentage of the profit of investment projects, as well as a combination of these two means of security. Represented by several groups of bonds: bonds with a general guarantee.

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Environmental economics in EU and Hungary in 2010s

ABSTRACT

The environmental economic analyses became very actual, because of the negative influences of the human activities and the performances of the economies of the world economy including the EU-28 member states on the nature. The case study focuses on the environmental economic issues in the EU-28 based on the data bases concerning the different variances from the SPSS system. The statistical data based on the SPSS show that the correlation among ten variances are very strong by 93,3% and also the significance is very strong among themselves. The data shows the Total Variance Explained by the Initial Eigenvalues in Cumulative by 74,074%, which means that the first four components explain the correlations among variances by 74,074%. The Rotated Component Matrix shows four components, and each component including different number of variances.

The main economic difficulty is for the EU the unemployment rate increased by 2,1%, while the GDP average growth rate was just only by 1% – one percent – between 2006-2015, which is unfavourable economic growing conditions. The EU has also a considerable problem concerning the *Generation of waste by economic activity (variance: GenWasteTo)* from point of view of the environmental conservation strategy. Because the EU has increased the Generation of waste by 44,4% since 2004.

Hungary has decreasing unemployment rate by 0,7%, which is considerable in the EU-28. The GDP growth of Hungary has increased rate by 2% since 2010. Hungary has 32% increasing rate for the *resource productivity*, which can be mentioned as good, because it is closed to the average level of EU, as 31,5% increasing rate since 2010. Hungary could have decreased the GHG gas emission by 61,0% since 1990 less than average GHG gas emission decrease of EU, which was 81,38% in the same time. Hungary decreased the *Generation of waste by economic activity* by 32,5% against 44,5% increase of EU in the same time.

The salinization process can be considered almost on 3,8 million ha areas of Europe. Also the soil contaminations included heavy metal and mineral oil widely extended in 3 million sites of Europe. Hungary could have realised considerable decreasing rate by 76,0% in *municipal waste* by two times more than the EU decreasing average level, as 38,17% since 2005.

In EU the energy intensive increased by 186,98% from 2006 and therefore the energy use is not productivity. This situation increases the one-side energy dependence for EU and opposite to the original energy strategy in Rome Treaty in 1956. Also the Resource productivity should be developed in EU in order to obtain and increase more competitive position for EU on the World economy, because its growth was only by 31,5% from 2010.

Keywords: SPSS analysis, Variances, Generation of waste, Energy intensive, Productivity

JEL code: Q25, Q40, Q53, Q54

INTRODUCTION

The environmental economic analyses became very actual, because of the negative influences of the human activities and the performances of the economies of the world economy including the EU-28 member states on the nature. Therefore performance of the mankind and human activity resulted in the intensive greenhouse gas (GHG) emission, which leads to the global warming and the increase of the sea-level. The basic solution is to stop this global warming process and to decrease the GHG emission by changing the human activities in order to avoid of the climate change on the earth.

The study analyse is based on the international scientific resources including some main opinions of experts and the international data bases including the EUROSTAT, which can make possibility to overview main trends of the EU member states from 2006 to 2014 in fields of the economic growth, energy intensity, resource-productivity and also gas emission. Széles Zs.-Zéman Z. – Zsarnóczai S. (2014, p. 323-331) authors emphasize that also the main aims for creating municipal companies are to manage the green policy of the towns and to operate the infrastructure. Therefore the decreasing rate for the creating municipal waste by waste operation is very considerable aim for the EU and the Hungarian environmental political strategy (see Table1 and Table-2).

MATERIAL AND METHOD

The case study focuses on the environmental economic issues in the EU-28 based on the data bases concerning the different variances from the SPSS system, as Unemp0615 (Unemployment in % of active population in total), GDPaverage (GDP and main components – volumes, Million euro, chain-linked volumes, reference year 2005= 100, at 2005 exchange rates, GDP at market price, Annual average GDP growth 2005-2013), EmisNitrogen (Emissions of nitrogen oxides (NOx) by source sector, 2006-2015, Tonnes, Total sectors of emissions for the national territory), EmisSulphur (Emissions of sulphur oxides (SOx) by source sector, Tonnes, Total sectors of emissions for the national territory), EnIntAverage (Energy intensity of the economy, average of 2006-2014, kg of oil equivalent per 1 000 EUR), ResoProducti (Resource productivity, Euro per kilogram, chain linked volumes (2010), GHGEmis90 (Greenhouse gas emissions (in CO2 equivalent) indexed to 1990 = 100), ReNeFrWate (Renewable freshwater resources, Million cubic metres), GenWasteTo (Generation of waste by economic activity, Tonnes, All NACE activities plus

households, 2004-2014) and also MunWaGenC (Municipal waste by waste operations, Waste generated, per capita in kg, 2005-2014).

The statistical analyses are set up the SPSS (Special Program for Social Sciences), which scientific methods were worked by Sajtos – Mitev (2007). Based on this research method the analyses need for describing the results by Factor Analysis, Descriptive Statistics, Regression Method, Graphs and Hierarchical Cluster Analysis with setting Dendrogram based on the Ward's Method. Naturally all of the researching methods can make possibility to compare the EU-28 based on the different economic conditions with variances used in the research process. Also the data bases of Eurostat provide possibility to determine and describe measure of the environmental damages resulted by the performance of the EU member states. The variances used in this research concern such statistical data, which the OECD and EU demand for the EU member states to determine environmental damages resulted by the each EU member state and to compare the different levels and measures of the amount of the damages among EU member states.

At recent decades even *after the economic crisis in 2008* the role of the state increased to avoid of decreasing the negative effects of the world economy on the national economies in spite that the EU-28 can be strong. But the EU institutional background cannot provide enough defence itself for each EU member state against influences of the world economic crisis. Therefore the environmental policy and strategy of EU member states should increase to concentrate the national economic resources to decrease the negative effects of the human activities on the nature. The policy handling crisis and the increasing role of state in the national economy can be seen in detailed in Lentner, (2010, p. 122) and Lentner-Farkas, (2004, p. 8) based on the unorthodox policy strengthening at present.

RESULTS AND DISCUSSIONS

Some experts focused on that because of the role of fossil energy use decreased therefore the importance of the crude oil exporting countries will soon decrease, but this crude oil export dependence will increase during the next two years. The worst economic conditions resulted by increasing dependence on the world economic changes are critical for Yemen, Iraq, Nigeria and Venezuela. The other countries have little better conditions, for example Russia, Algeria and Kazakhstan, which are at middle level among economies with the worst and the stabile economic conditions (Sebestyén, Szép, 2016). Mika (2016) declared that the GHG emission should decrease by 60-80%, because if the temperature increases by 3oC, the global warming effects cannot be turned back, therefore the temperature should be kept within 2oC increase in order to avoid of the more negative influences of the global warming.

Also other authors emphasized the importance of the well operating and operative bank system and bank controlling, namely: "So the strategic controlling activity regarding the bank as a whole deals with only developmental, structural and security issues; mostly with the balance sheet structure risks,

market risks, structural yield options, and growth potentials." (Kalmár et al, 2015, pp. 110-125). Also according to the innovative development, this needs to extend the knowledge of human resources, even for environment friendly technology to be introduced, as Staniewski declared that "The area of human resource management is one of the basic elements of an effectively managed company. In the era of the knowledge-based economy, its importance becomes strategic as the effectiveness of activity within this scope largely determines the achievement of the company's competitive advantage. Knowledge-based resources can be particularly important to ensure this advantage" (Staniewski, 2011; also in detailed in J. Szopiński & T. Szopiński, 2013).

Also additionally to the decreasing tax, the productivity is important in development of the economy. As Palánkai (2006, p. 314) declared that "The rapid growth of productivity is still of key importance, and much difference is made by how fast and successfully these countries can enter the knowledge-based society. An encouraging sign is that transnational companies in Central and Eastern Europe have made increasing investments in the R and D sector."

The biggest investment gap from selected sectors is in fields of water management, sanitation, the food security, agriculture and education (see in Table-1). Mostly these sectors have the same investment gap, which does not show their real importance and priority in the world economy. Financial strategy and management at national level should be extended similarly to the firm –level, in which there is a role of governance, organizing, planning and controlling according to well-defined goal criteria; preparation and realization of raising capital owners. Also when companies need for financial resources, even for investment relevant to the reducing gas emission, in any case the financial institutes should follow the financial conditions and risk management of the firms or small-medium enterprises, for example analyse all business cycles, evaluate the risks and determine risk sensitivity of company (see detailed in Hegedűs-Zéman, 2016, p. 1038 and Kalmár et al, 2015, p. 111.).

The other sensitivity question is the profitability and liquidity of typical bank and firm risk factors based on the possible security policy aspects, when firms decide to implement environment friendly investments and renewable energy use. Final solution will be realised by decisions of firms and banks in the private sector of mostly developed countries. Also the different kinds of taxes as revenues of the governmental budget can make influences on the governmental balance, which can continuously have negative balance, therefore this can accumulate the governmental debt of the EU member states from year to year (Lentner, 2010, p. 125).

The governmental debt can result the devaluation of the national currencies or the common currency of the EU, namely Euro. Therefore the main aim of any country is to strengthen its economy and performance to avoid of the economic fall, the economic and financial crisis, as Domokos declared "The debt rule has been placed at the heart of legislation on public finances. Fulfilling the debt rule depends not only on reducing public debt but also on increasing the gross domestic product

Table-1: Summarised data-base for the environmental economics in EU in % between 2006-2015 based on the SPSS analyse

	Un-emp0615	GDP average	EnIn-Average	ReNeFr-Wate	MunWa-GenC	Gen-WasteTo	ResoProducti	Emis-Nitrogen	Emis-Sulphure	GH-GEmis90
Belgium	0,20	1,00	156,43	27664,40	-46,00	24,20	23,80	-34,10	-68,40	79,07
Netherlan	1,90	0,70	128,98	32391,00	-72,00	45,10	5,60	-34,50	-54,70	87,31
Luxembo.	1,80	1,50	112,08	1998,20	-56,00	-15,00	20,40	-47,70	-43,60	90,56
Hungary	-0,70	-0,10	247,84	58311,00	-76,00	-32,50	32,00	-25,40	-31,00	61,02
Slovenia	3,00	0,70	198,07	30846,40	-62,00	-18,80	66,10	-25,00	-47,00	89,23
Austria	0,40	1,40	112,46	90688,00	-9,00	5,40	18,60	-31,40	-41,00	98,23
Finland	1,70	0,60	188,39	225075,00	4,00	37,70	20,20	-32,70	-48,00	84,37
Czech R.	-2,00	1,80	279,84	56626,00	12,00	-20,00	34,20	-37,20	-37,50	63,45
Malta	-1,40	2,30	138,90	175,55	-23,00	-47,00	-3,10	-31,00	-59,40	150,88
Croatia	4,70	-0,10	203,73	61350,00	51,00	-48,20	39,90	-32,00	-71,30	70,4,
Portugal	3,70	-0,40	137,53	65292,00	1,00	-50,20	33,50	-32,40	-77,00	108,82
Denmark	2,30	,10	77,03	34287,00	69,00	59,50	35,70	-44,10	-62,00	74,40
France	1,60	0,70	130,11	507469,90	-21,00	10,60	25,30	-34,70	-61,30	85,37
Italy	5,10	-0,60	107,91	247459,40	-58,00	13,80	59,50	-33,30	-66,00	81,36
Greece	15,90	-3,30	131,53	115000,00	67,00	109,20	-1,80	-40,00	-74,10	97,18
United K.	-0,10	0,60	111,72	284739,00	-99,00	1088,70	35,90	-39,40	-54,00	68,54
Ireland	4,90	,30	86,12	89597,50	-145,00	-45,20	125,30	-42,00	-69,30	105,69
Spain	13,60	0,20	123,11	332215,90	-153,00	-31,00	136,00	-41,40	-78,00	117,54
Cyprus	10,40	0,60	139,97	2863,90	-71,00	-8,50	90,20	-18,80	-46,60	143,11
Bulgaria	0,20	2,00	489,27	72748,00	-146,00	-10,60	9,70	-26,30	-75,30	55,09
Romania	-0,40	2,60	283,58	160392,00	-134,00	-27,70	-6,10	-38,30	-73,00	43,68
Germany	-5,50	1,50	125,00	276889,00	53,00	6,50	12,50	-21,40	-18,50	73,50
Sweden	0,30	1,80	132,17	353082,00	-39,00	82,00	-9,00	-24,40	-37,00	77,36
Latvia	2,90	1,40	230,32	45563,00	5,00	108,50	13,30	-22,30	-56,00	44,04
Lithuania	3,30	1,50	256,59	47034,00	-46,00	-11,60	15,80	-15,60	-41,60	40,51
Estonia	0,30	2,10	374,33	31609,70	-76,00	4,50	-4,00	-15,50	-41,60	52,87
Poland	-6,40	4,50	272,68	212440,80	-47,00	30,20	18,60	-16,50	-39,40	80,68
Slovakia	-2,00	4,10	259,97	41377,40	48,00	-16,60	33,10	-14,50	-48,00	54,50

Source: Owned calculation based on the SPSS with data of Eurostat

(GDP), as a precondition of which the principle of a competition-based economy has also been strengthened at the constitutional level” (Domokos, 2016).

From point of view of the natural resources there is a lot of water resources in Egypt, as Neszmélyi (2014, p. 62) wrote that Egypt has natural resources as energy and for agriculture and huge amount of human resources, for example renewable energy resources on the Nile river in MENA and ASEAN countries and human resources in China, Japan, and South –Korea (Kozár – Neszmélyi 2014, pp. 94-95; Neszmélyi 2014, pp. 23-24). Based on the sustainable development the natural resources should be managed, like water management, sanitation and clean development mechanization (CDM) for sustainable human health.

Component-1:

Unemp0615 (Unemployment in % of active population in total), EUROSTAT, 2016

GDPAverage (GDP and main components – volumes, Million euro, chain-linked volume, GDP at market price, Annual average GDP growth, in %, 2006-2013)

EmisNitrogen (Emissions of nitrogen oxides (NOx) by source sector, 2006-2015, Tonnes, Total sectors of emissions for the national territory)

EmisSulphur (Emissions of sulphur oxides (SOx) by source sector, Tonnes, Total sectors of emissions for the national territory)

Component-2:

EnIntAverage (Energy intensity of the economy, average of 2006-2014, kg of oil equivalent per 1000 EUR),

ResoProducti (Resource productivity, Euro per kilogram, chain linked volumes (2010),

GHGEmis90 (Greenhouse gas emissions (in CO2 equivalent) indexed to 1990 = 100)

Component-3:

ReNeFrWate (Renewable freshwater resources, Million cubic metres, average between 2006-2014), EUROSTAT, 2016

GenWasteTo (Generation of waste by economic activity, Tonnes, All NACE activities plus households, 2004-2014)

Component-4:

MunWaGenC (Municipal waste by waste operations, Waste generated, Kilograms per capita, 2005-2014)

The statistical data based on the SPSS show that the correlations among ten variances are very strong by 93,3% and also the significance is very strong among themselves. The Total Variance Explained by the Initial Eigenvalues in Cumulative by

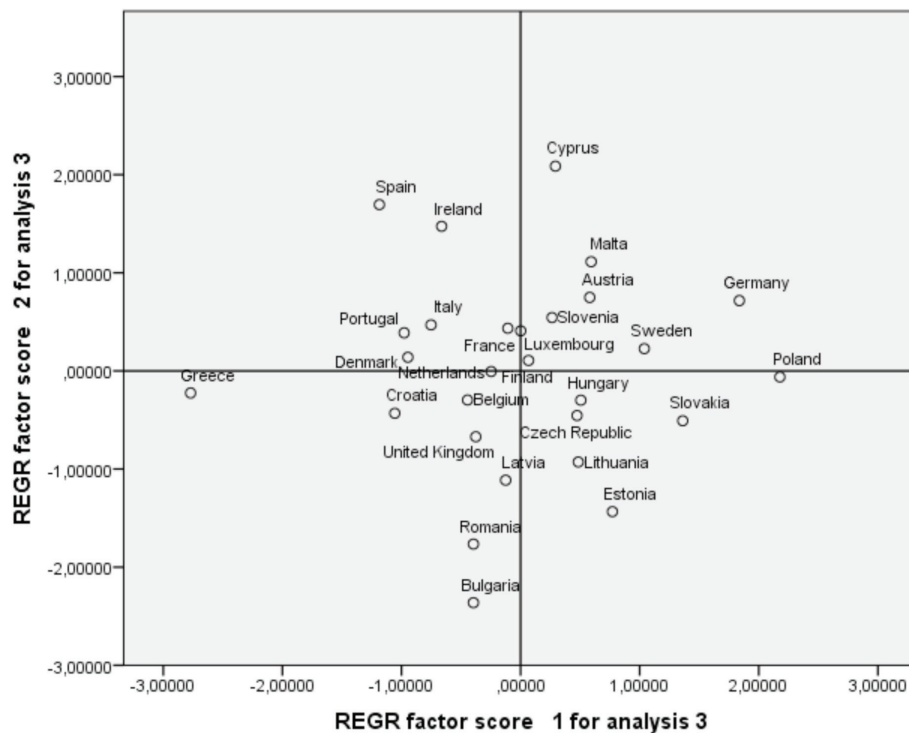


Figure-1: REGR factor score 1 and REGR factor score 2 analysis

Source: Owned calculation based on the SPSS with data of Eurostat

Component-1: Unemp0615, GDPaverage, EmisNitrogen, EmisSulphur
Component-2: EnIntAverage, ResoProducti, GHGEmis90

74,074%, which means that the first four components explain the correlations among variances by 74,074%. The Table-2, namely Rotated Component Matrix shows four components, and each component including different number of variances (see in detailed in each component including variances in Note of the Table-2).

Generally in those EU member states, which are at Principle line “X” to right side from Principle line “Y”, as from zero of score in cases of variances of the **Component-1**, the variance **Unemp0615** has decreasing trend, and the **GDPaverage**, **EmisNitrogen** and **EmisSulphur** have increasing growing trends. Generally in those EU member states, which are at Principle line “X” to left side from Principle line “Y”, from zero of score in cases of variances of the **Component-1**, the variance **Unemp0615** has

increasing growing trend, and the **GDPaverage**, **EmisNitrogen** and **EmisSulphur** have decreasing trends.

At the principle Line “X” to the right side from the line “Y”, for the **Component-1**, the **Unemp0615** (EUROSTAT, 2016, see Table-1 and Figure-1), has decreased, mostly by 6,4% in Poland, by 5,5% in Germany and by 2,0% in Slovakia and Czech Republic for the period of 2006-2015, at list for one decade. The other variance of the **Component-1** is the **GDPaverage**, which has been very considerable increasing by 4,5% in Poland, by 1,5% in Germany and by 4,1% in Slovakia to Line “X” to right side.

The worst GDP decrease has been by 3,3% with increasing unemployment rate by 15,9% in Greece and by 0,6% in Italy since 2006, also some highly developed EU member states had less GDP growth by 0,7% in France, by 0,6% in UK and by 0,2% in Spain. In spite that the EU member states have had average annual GDP growth by 1% since 2006, mostly the EU member states in Middle and East European region and some other small member states had such GDP growth rate, which ensured the 1% of EU average GDP growth, for example by 2% in Bulgaria, by 1,8% in Czech Republic, by 2,1% in Estonia, by 2,6% in Romania from 2006 and by 2% in Hungary from 2010. The other variance of the **Component-1** is the **EmisNitrogen**, where the EU average has had decreasing rate by 30% in tonnes since 2006 until 2015. Also the **EmisSulphur** has averagely decreased by 54% in tonnes in EU since 2006, which can be considerable positive result from side of EU.

The variances as **EnIntAverage**, **ResoProducti** and **GHGEmis90** are included in the **Component-2** (see Table-4). Generally those EU member states are above the principle line “X” their variance as **EnIntAverage** is decreasing, and their **Reso-**

Table-2: Rotated Component Matrixa

	Component			
	1	2	3	4
Unemp0615	-,777	,342	-,164	,116
GDPaverage	,811	-,258	-,070	,252
EnIntAverage	,265	-,762	-,363	,330
ReNeFrWate	,066	,148	,732	,116
MunWaGenC	,033	,034	-,128	-,918
GenWasteTo	-,097	-,165	,795	-,013
ResoProducti	-,241	,617	-,037	,544
EmisNitrogen	,676	-,209	-,333	,002
EmisSulphur	,800	,071	,075	-,319
GHGEmis90	-,169	,841	-,123	,061

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations. Source: Owned calculation based on the SPSS with data of Eurostat

Producti and *GHGEmis90* are increasing. Generally in those EU member states, which are under the principle line “X”, their variance as *EnIntAverage* is increasing, and their *ResoProducti* and *GHGEmis90* variances are decreasing.

In case of the *EnIntAverage* those EU member states have favourable conditions, where less increasing energy use in % based on kg of oil equivalent per 1000 Euro is used for the production or services for period of 2006-2014. These states are above the principle line “X”, therefore they are not energy intensive countries. But those EU members states, which use more energy in kg per 1000 Euro and their increasing rate is considerable in this field, these are under the “X” line, therefore these member states are energy intensive economies.

For example above line “X”, 77,04% lower increasing rate for energy use was in Denmark, 125% lower increasing for energy use in Germany, 123,1% increasing rate in Spain, 130,1% in France, 112,46% in Austria and 132,2% in Sweden. These EU member states use less energy and their increasing energy use is at low level, therefore they are not energy intensive countries comparably to EU member states.

These member states are energy intensive countries, because their energy use has more increased since 2006. Some highly developed EU member states, as UK and Belgium, are also under this line “X”, in spite that they have efficient energy use, by only 111,72% increasing rate in UK and by 156,43% in Belgium, but they are under line “X”, because their either Unemployment rate or GDP average rate variances are considerable during this period (see Table-1 and Figure-1).

In case of the *ResoProducti* growing rate is increasing in the resource productivity per kg in those EU member states, which are above line “X”. For example Spain has reached the most increasing rate by 136% and Ireland has reached increasing rate by 125,3% for the resource productivity since 2010, therefore the resource productivity became favourable. Also Cyprus by 90,2%, Slovenia by 66,1% and Italy by 59,5% reached increasing rate in the resource productivity. Some other EU member states reached less increasing rate for the resource productivity in Euro per kg, but their developed level could be higher than the other EU member states ‘one and also the other variances contributed that these EU member states are above line “X”, for example Germany by only 12,5%, Austria by 18,6%, Belgium by 23,8%, France by 25,3% in field of resource productivity from 2010, therefore their resource productivity became better than countries over Line “X”.

The EU member states under line “X” have generally decreasing *ResoProducti* variance. For example decreasing rate of the resource productivity in Euro per kg decreased by 6,1%

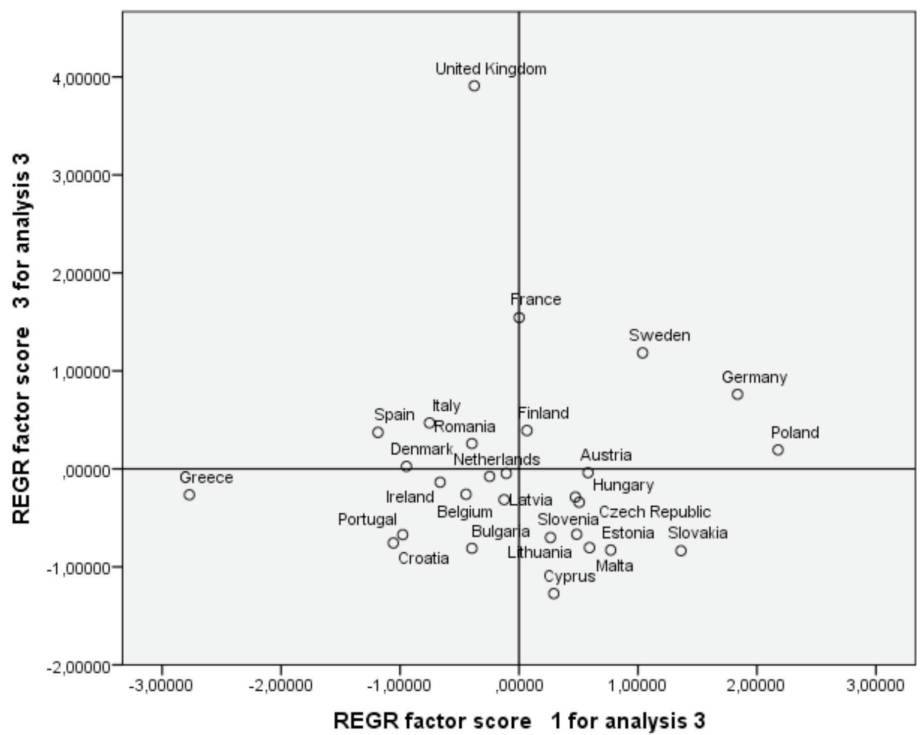


Figure-2: REGR factor score 1 and REGR factor score 3 analysis

Source: Owned calculation based on the SPSS with data of Eurostat

Component-1: Unemp0615, GDPAverage, EmisNitrogen, EmisSulphur
Component-3: ReNeFrWate, GenWasteTo

in Romania, then by 4,0% in Estonia and by 1,8% in Greece. Somehow increasing rate was by 9,7% in Bulgaria, by 13,3% in Latvia and by 15,8% in Lithuania in resource productivity in Euro per kg. In spite that UK has considerable increasing rate for the resource productivity by 35,9%, it has less GDP growth and the largest general waste production increase in EU, therefore UK remains under line “X”.

In general it can be declared that the resource productivity per kg has increased in EU since 2010, in spite that there are some EU member states have some backwardness in this field, for example Romania, Greece, Bulgaria, Estonia, Malta and Sweden based on the statistical data basis, they could decrease resource productivity. From the average level of the EU, as 31,5% based on the data of Table-1, there some EU member state, which have strong increasing trend in the field of resource productivity in % in Euro per kg, as Spain, Ireland, Cyprus, Slovenia, Italy, Croatia, Czech Republic, Denmark, UK, Portugal, Hungary and Slovakia. Also Germany and Belgium are strong economies, therefore their resource productivity cannot easier be developed from the highly developed level by considerable increasing rate.

The average increasing rate of EU-28 has been 81,4% in field of *GHGEmis90* since 1990, which means a considerable increase in spite that EU accepted the Kyoto agreement to decrease the gas emission. Most of the developed EU member states have realised more gas emission than average level of the EU in gas emission since 1990, and also those EU member states, which do not have modern advanced environment friendly technological production in industry. For example Green House Gas emission was 150,88, as the highest level in Malta, 143,1 in Cyprus, 117,54 in Spain, 108,82 in Portugal,

105,69 in Ireland, 98,23 in Austria, 97,18 in Greece, 90,56% in Luxembourg, 89,23 in Slovenia and 87,31 in Netherlands. About half of the EU member states *above line "X"* have more GHG emission than the average level of the EU. *Poland* by 80,68 has had mostly the same GHG emission of the EU average level, as 81,4 with considerable industrial development based on the increasing Foreign Direct Investment (FDI) since 1990.

The most of EU member states are standing *far from* the positive economic developing trend of Germany and also they are *far from* the realising implementation of this economic developing trend in case of Germany, which can lead to the economic social results requested by the EU strategy. *The support system should be realised by supporting Small and Medium scale Enterprises (SMEs) with developing environment friend technology to avoid of the global warming and climate change.*

In the **Figure-2** in those EU member states, which are above the line "X" the **ReNeFrWate** is generally higher in average amount of renewable freshwater resources in million cubic meter than in EU member states under the line "X". The line "X" can be equally with the average renewable freshwater resources of the EU, which is 125000 million cubic meters averagely between 2006 and 2014. France has the largest renewable freshwater resources by 507469,9 million m³, after that 353082,0 million m³ in Sweden, 332215,9 million m³ in Spain, 284739,0 in UK, 276889,0 in Germany, 247459,4 in Italy and 225075,0 million m³ in Finland. Naturally EU member states with less area cannot have more renewable freshwater resources. Also the drought weather can make influences on decreasing the amount of the freshwater resources in each member state. In spite that there are some EU member states have less amount of freshwater resources, but altogether these freshwater resources can be seen as considerable in EU. Also UK has more freshwater resources than France comparably to the area-size of UK. France has double more lands than the UK has one.

Within the soil degradation, the soil erosion is a very important difficulty, which is resulted by water and also the wind. Naturally the erosion is influenced by climate change, as global warming, and land use, also some conservation practices at the surface of soil. The soil loss resulted by erosions can be calculated as more than 1 ton per hectare annually, which has occurred for the last between 50 and 100 years. *The water erosion makes influences on 115 million hectare soil areas, which can be equally with about 12% of total land area in Europe, while the wind erosion affects concerned 42 million hectare soil areas* (EEA, 2009).

In case of the **GenWasteTo** the EU member states *above line "X"* have considerable increasing rate for the generation of waste. The biggest EU member state producer has been the

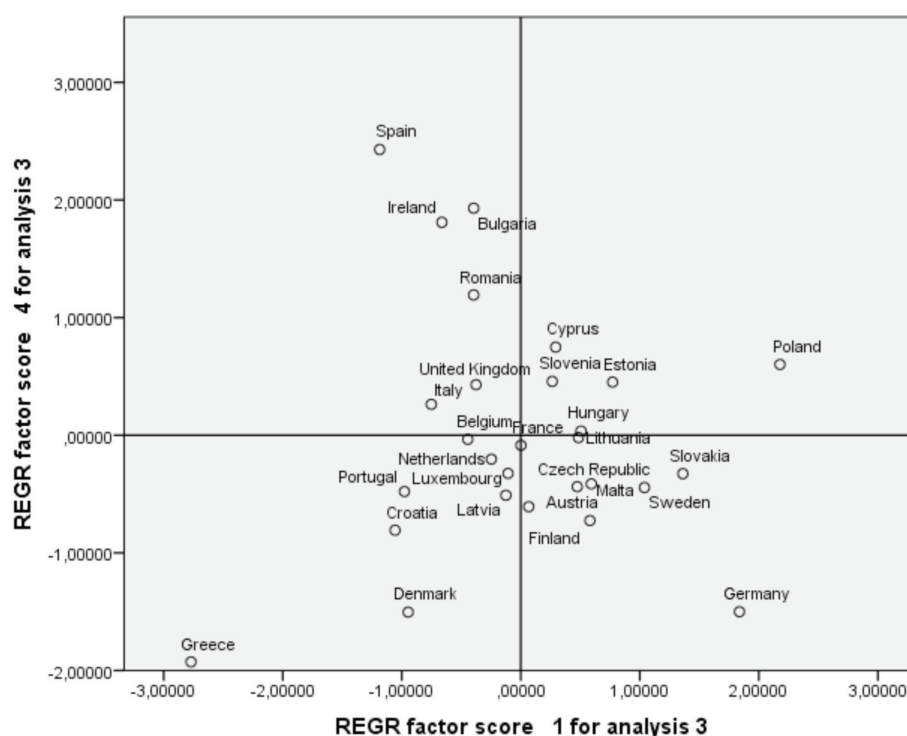


Figure-3: REGR factor score 1 and REGR factor score 4 analysis

Source: Owned calculation based on the SPSS with data of Eurostat

Component-1: Unemp0615, GDPaverage, EmisNitrogen, EmisSulphur
Component-4: MunWaGenC

UK by increasing rate 1088,7% per capita in kg since 2004. Also some EU member states have increased the generation of waste, for example Greece by 109,2%, Latvia by 108,5%, Sweden by 82,0%, Denmark by 59,5% and Netherland by 45,1% for 2004-2014. Some other EU states have less increasing rate in this one, like Germany, France, Italy and Austria. Also 14 EU member states have decreased the generation of waste since 2004. *Hungary* has realised positive result by decreasing 32,5% since 2004. The EU member states have strong increasing rate in production of generation of waste, which have considerable heavy industry or animal husbandry producing waste as by-product. Some of these member states started to use new technology based on the re-cycling waste in order to avoid of the heavy concentration of the generation of waste. The **Figure-2** well shows how much UK achieved the worst and the biggest result in producing the generation of waste in all EU not using the re-cycling process to decrease this large amount of the generation of waste.

Based on the **Figure-3**, **MunWaGenC** variance shows *considerable decreasing rate* per capita in kg, from 2005 to 2014 in cases of the EU member states *above line "X"*, for example Spain has reached the biggest decreasing rate by 153,0% since 2005, Bulgaria by 146,0, Ireland by 145,0% and Romania by 134,0% above the line "X", while the EU average level in the municipal waste was not so considerable decreasing rate by 38% from 2005 till 2014. Some other EU member states produced municipal waste by *considerable increasing rate*, for example Germany by 53,0%, Denmark by 69%, Greece by 67,0%, Croatia by 51,0% and Slovakia by 48,0% under the line "X". Some other EU member states produced municipal waste by *considerable*

increasing rate, for example Germany by 53,0%, Denmark by 69%, Greece by 67,0%, Croatia by 51,0% and Slovakia by 48,0% under the line "X".

In 1995 the *municipal waste land-filled* was 100%, therefore comparably to results of 1995 in *Slovakia* these were little higher, in *Czech Republic* this was about 70% in 2008. In *Italy* the municipal waste land-filled was about 62% in 2003 and 50% in 2008 comparably to 100% of 1995. Most favourable results of *Austria* in *Alps-Adrian region* was 30% in 2003 and about 3% in 2008. By the end of 2008 in Switzerland, Germany and The Netherlands the municipal waste land filled was about 1% or less in 2008 comparably to 100% of 1995 (EEA 2007a; EEA 2007b). This trend can be understood if we know that land-filled was about 40% of all municipal waste, not at level of household economies in EU-27 by the end of 2008. Based on the resource use per person in EU between 2000 and 2007 the domestic material consumption (DMC) increased by little measure about 2% in EU-12, as new member states, over up the DMC average level of EU-27 by the end of 2007. The DMC is an aggregate of materials – excluding water and air –, which are actually consumed by a national economy (SERI, 2009). Additionally to use of DMC the water use becomes very considerable, even when the available water resources are very scarcity at present and also in the future the scarcity water will be much less under level, which is excepted by the minimum use for survive of the people life. Finally by the beginning of 2010s in the EU there were about between 118 and 138 million tonnes of bio-waste produced annually, of which approximately 88 million tonnes was municipal waste (EC, 2010). This shows that annually the considerable amount of waste are produced in EU and also the share of the waste produced by family holds is considerable in spite that its portion less than the waste production of municipal organizations.

SOME CONCLUSIONS FOR ENVIRONMENTAL CONDITIONS IN HUNGARY

Hungary has decreasing unemployment rate by 0,7%, which is considerable in the EU-28, because of the most of them have large or larger unemployment rate, and these countries are at lefts side of the principle line of "X". The *GDP average* has been less decline, in *Hungary* by 0,1% because since 2006, because the governmental financial debt has been considerable until 2010, and only since the beginning of 2010s the economic growth has started its prosperity by stimulating the national companies and international corporations to increase their investments and Foreign Direct Investments in *Hungary*. *The GDP growth of Hungary has increased rate by 2% since 2010.*

Hungary reached less decreasing gas emission by 31% in Sulphur and by 25,4% in Nitrogen than average level of the EU as by decreasing rate 54% in Sulphur and by 30% in Nitrogen since 2006. Other part of the EU member states *under the line "X"*, for example *Bulgaria*, where 489,27% increasing energy use in % based on kg energy has been used for 1000 Euro valued production or services averagely for the period of 2006 – 2014, also 374,3% increasing rate in *Estonia*, 283,6% in *Roma-*

nia and 247,84% in *Hungary*, which last one is at middle level concerning the average of EU, as 187% increasing energy use.

Hungary has 32% increasing rate for the resource productivity, which can be mentioned as good, because it is closed to the average level of EU, as 31,5% increasing rate since 2010. *Hungary* could have decreased the gas emission by 61,0% since 1990 less than average GHG gas emission of EU with selling some parts of the national GHG emission quote. *Hungary* has favourable natural conditions for creating good adequate amount of renewable freshwater resources concerning the area-size of the country, which is 58311,0 million m³ averagely between 2006 and 2014. The *water management* is important from multi-side reasons, either renewable freshwater resources or renewable energy resources, also to avoid of the negative influences of the water erosion for soil degradation (see Table-1 and Figure-2).

In *Hungary* 1 mm deep soil loss resulted by erosion is 14 t per hectare. The erosion is various depending on deep loss in mm based on the amount of ton per hectare, which are as follows: 1. Strong erosion is 112 ton per hectare in case of 8 mm in deep loss. 2. Middle erosion is 70 ton per hectare in case of 5 mm in deep loss. 3. Moderately erosion is 42 ton per hectare in case of 3 mm in deep loss. *Since the end of 1960s the soil loss resulted by erosion has been about 50 million m³ annually in Hungary* (Thyll, 1996). *Hungary* has well fertile flat land and about 44% of its soil has unfavourable hydro-physical properties, and about 2.3 million ha area are affected by water erosion and 1,3 million ha by wind erosion. About 2.3 million ha of acidic soil and around 10% of *Hungary* is affected by salinization. The poorest quality of soil is found in the sandy areas, the main depressions of the Great Hungarian Plain and hilly areas. Also the best soil conditions are found in the Aeolian soil plateaux of Transdanubia (Várallyay, 2007).

The other difficulty is the salinization of soil, which connects with human activities, when the people use either unfavourable irrigation system or in some areas of Europe highly level of salt content water, is used. The salinization process can be considered almost on 3.8 million ha areas of Europe. Also the soil contaminations included heavy metal and mineral oil widely extended in 3 million sites of Europe (EEA 2007a; EEA 2007b; EEA 2009). *Hungary* could have realised considerable decreasing rate by 76,0% in municipal waste by two times more than the EU decreasing average level since 2005. In 1995 the *municipal waste land-filled* was 100%, therefore comparably to results of 1995, in *Hungary* the municipal waste land-filled was about 85% in 2003 and 75% in 2008.

Hungary is in the first group, where member states could reach little unemployment increase with increasing GDP growth, mostly as the EU average, while the second group including Germany and Sweden realised less unemployment rate with favourable level of the GDP growth in EU-28. The GDP increasing growth of the EU-28 could be realised mostly by the Central-East European EU member states, because without their GDP growth, the EU has not provided 1% of GDP growth for the period of 2006.-2014. The less increasing rate of energy-intensity of the economy was the best in UK, as the 5. Country group and 4. Country-group, but this last one has less

energy intensity industry, and these member states do not have strong industry. The first group, Hungary has a higher level of energy-intensive, than the average level of the EU in this field for the energy use. Also the first country group mostly realised the EU average level in field of the gas emission, municipal waste and resource productivity, while this group considerably decreased generation of waste, more than the EU. Because of the first group including Hungary has less renewable freshwater resource, than the average measure of the EU-28, therefore also Hungary should focus on the more efficient water management and create water reserves to keep back the water running from Hungary.

The main economic difficulty is for the EU, that the unemployment rate increased by 2,1%, while the GDP average growth rate was just only by 1% – one percent -, which can be titled as unfavourable economic growing conditions. Only the EU member states in Central and East Europe included *Hungary* provided the average GDP growth for all of the EU. The EU should more stimulate the FDI and EU transnational corporations to increase the jobs to decrease unemployment and to avoid of the political and social crisis. Also the innovative technology should follow the strategic aims of environmental conservation policy to mitigate the gas emission. Hungary successfully forced to stimulate the transnational corporations to increase their investments and to extend the advanced environment-friendly technology based on the Foreign Direct Investment (FDI) inflow into Hungary.

At present in EU the unemployment rate presses the demographic conditions in direction to the negative trend, because the unemployment problem mostly concerns the youth people, in case of which the unemployment rate increases more, which does not stimulate the youth people to create families with new generation. This resulted the decreasing rate of population in all EU. In Hungary the employment level has considerably increased for the last two years and also the salary and pension could have increased mostly since the beginning of the 2016, which can also continue in 2017. The increasing growth of employment in Hungary accompanying with strengthening the social network can stimulate to increase the population and number of births.

The EU has a considerable problem concerning the *Generation of waste by economic activity* from point of view of the environmental conservation strategy. The EU should considerably decrease either Generation of waste and *Municipal waste* accompanying with decreasing GHG emission. The Hungarian authorities have helped the inhabitants to realise the selective waste collection for the last four-five years in order to avoid of increasing the generation of waste. This Hungarian governmental efforts stimulated the companies working in Hungary to decrease waste.

The Water management, renewable freshwater resource issues should be developed in the EU, because this water management is very costly with very considerable waste and pollution around water resources. In Hungary the biggest water cleaning equipment – investment in Central Europe was realised in South Budapest at beginning of 2010s by support of

the EU. This investment is aimed at remaining clean water of Danube.

Also the water renewable energy use is to be developed to direction of bigger share of all energy use. EU is dependent on the fossil energy from Russia and Middle East OPEC countries, therefore the water renewable energy use can be more favourable for the EU. Energy intensive has increased since middle of 2000s and therefore the energy use is not productivity. This situation increases the one-side energy dependence for EU and opposite to the original energy strategy from Rome Treaty in 1956. The main difficulty is in EU, that the Energy intensity considerably increased, namely 186,98%, more than the Resource productivity, namely by 31,47% in EU for the last decade (see Table-6). Therefore also the Resource productivity should be developed in EU in order to obtain and increase more competitive position for EU on the World economy.

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Following international tendencies? The role of SPEs in a Hungarian corporate scandal

1. INTRODUCTION

Special purpose legal entities, legal institutions created for a specific purpose, have pursued a flourishing career in articles of legal journals on corporate scandals. Especially the Enron scandal and the securitization of mortgage obligations, i.e. mortgage-backed securities (MBS) exerted a massive impact on investors, mainly on the victims of the said abuses, during the financial crisis of 2007-2009. The use of this legal institution stained by abuses gained followers in the United States and also in Western Europe, for instance the Italian Parmalat and the Dutch Royal Ahold, just to mention two examples. However, little has been said so far about the use of SPE on the Central European markets, in particular about the bad faith application of this instrument, which is a special form of corporate abuse. This study article aims to compare the SPE schemes applied by Enron with the SPE form applied in the Quaestor scandal in Hungary, the role Quaestor Financial Hírúria Kft. played within the Quaestor group. First an overview of certain types and operational features of SPEs is provided and then the similarities between two series of abuse inducing a rumbling echo and regulatory changes are analyzed.

2. THE OBJECTIVES OF ESTABLISHING AN SPE AND ITS TYPES

The use of a Special Purpose Entity (SPE) is basically tied to achieving two aims. The primary goal of founding an SPE is to establish a legally independent business entity or one which is independent for accounting purposes. The goal of legal independence can be to ensure an *off-balance sheet status* due to tax or regulatory considerations. An SPE can also be used to *become bankruptcy remote*¹ from the sponsor establishing it, ensuring that the separate legal entity insulated from the risks (mainly the risks of bankruptcy and liquidation) of the founding (sponsor) corporation can issue higher rated securities in the form of the newly established business entity.

Business objectives can include performing business activities separately in the course of purchasing property or rights, for example in the case of establishing *joint ventures or synthetic leasing companies or by securitizing existing vehicles or off-balance sheet refinancing*². In this way the sponsor company can show a more favorable financial status to the outside world in its tax and accounting statements, thus creating about itself an investor sentiment steadily more favorable than its status is in reality.

SPEs are further used for exploiting the differences in national tax regulations. This latter arbitrage activity can also be tax arbitrage³, for example when royalty and license fees are channeled into a separate company which is later registered in a country

with more favorable taxation from where such amounts are channeled to the parent company as export revenue.⁴

Real estate transactions effected in the form of separate real estate companies (SPEs) are made attractive by the differences in the taxation on real estates in the case of private individuals and enterprises and also by the more favorable cost accounting possibilities to enterprises.

The compulsory use of a separate entity engaging exclusively in concession activities can be typical at the level of national economy in the case of concession activities too.

However, in the case of these latter three examples, legal and business separation is not necessary and is not realized either; economic profit is realized in the form of a subsidiary under the full scope legal and business control exercised by the owner company or private individual. In this case legal separation is realized in the form of an independent company, nevertheless, the owner retains full control.

The three typical forms, *joint venture, synthetic leasing company and securitization, off-balance refinancing* will be examined in terms of their legal separation and their separation from the establishing sponsor company supported by legal means, since the quality and the mere fact of compliance with the legal regulation shows the actual separation of the particular SPEs and, as we can see, compliance with these regulatory delimitations determine whether the more favorable tax and financial perceptions created by SPEs can be turned into reality.

2.1. Joint ventures as SPEs

In the case of joint ventures, the purpose of separation is to perform the new activity in the newly established company separately from the activities of the founding enterprises and also from the current market perception of those activities. In this case, the goal of establishing an SPE is to attain a level of exclusiveness, where what is important is the exclusiveness of the activity and the formal but not full separation of the activity from the owner enterprises. An enterprise performing a traditional activity with a declining growth potential and thus declining profitability will expediently establish an SPE for performing an activity with a huge growth potential together with a partner experienced in that activity. In this case the new company enjoys the capital strength of the traditional company but its activity with a declining market potential will not be perceived negatively in the market sentiment. For the appropriate operation, these advantages can be further enhanced by the well-structured constitutional document and internal by-laws of the joint venture SPE. These legal documents should define the appropriate rights to decision mak-

ing (including the right to veto) of the partner operating in the new branch of industry and the flexible regulation of the appropriate cooperation of the owner partners ensuring the continuous operation of the SPE and allowing for the quick exit of the owner partner if needed.

2.2 Synthetic leasing as a form of SPE

In the case of an SPE established for synthetic leasing, the separation from the establishing company is important because of the differences in the regulation of the financial and operational leasing⁵. If these two types of leasing have a different financial effect on the results of the companies, this can yield a substantial difference in profits – due to the inappropriate choice between the two types or to a negative decision taken by the tax authority.

Operational leasing can be accounted for as an expense in the United States. In contrast, the leased item is included among the assets of the company and the lease payments as liabilities among the resources in the case of financial leasing. In the case of the former, due to the item qualifying as an own asset, the item is to be depreciated and the outstanding lease payments are to be booked as liabilities in the balance sheet of the company, which substantially increases the indebtedness indicators of the company, also increasing the cost of raising further outside funds. In contrast, in the case of financial leasing, the market price or the value of the item calculated on the basis of the lease payments appears neither among the assets of the company, nor among its liabilities. In order for the company to achieve the classification of an operational leasing producing a more favorable financial situation instead of a financial leasing by involving an SPE established by it, the company must avoid any of the four features based on the GAAP⁶ principles. These accounting principles are as follows according to Statement No. 13 FASB⁷ (Statement of Financial Accounting Standards – SFAS 13):⁸ 1) title to the leased item can pass to the lessee at the end of the lease term, 2) the lessee has an option to purchase the real estate for substantially less than the expected fair market value of the asset, 3) the lease term is equal to or exceeds 75% of the economic life of the asset, 4) the present value at the beginning of the lease term of the minimum lease payments reaches 90 % of the market price of the asset. These accounting principles perceptibly allude to the realization of a purchase, while the operational leasing is a long-term type of leasing not ending in a purchase.

However, all economic and financial advantages of an SPE transaction qualifying as an operational leasing for avoiding all four of the above principles can disappear if the SPE needs to be consolidated. This is why the FASB Statement determines the principles of consolidation; if any one of the following principles is realized, the leasing transaction of the company can be consolidated in the case of real property.⁹ According to it 1) lessee residual value guarantees and participations in both risks and rewards associated with ownership of the leased property, 2) the contract contains purchase options, 3) the lessor SPE is not engaged in real economic activities, 4) the property is constructed to lessee's specifications, 5) lease payments have

been adjusted for final construction costs. Consolidation is also needed if 1) all the assets of an SPE exclusively serve a single lessee's leasing transactions, 2) the expected residual risks and rewards are exclusively linked to the lessee, 3) the creator of the SPE has not made any capital investment which is at risk during the entire term of the lease. This latter condition raises the extremely sensitive issue of the minimum amount of capital investment. Under the GAAP regulation, it must be at least 3 % of the SPE's resources, but obviously it may be higher depending on real needs, although it has typically remained under 10 % of all the assets of an SPE.¹⁰

It can be seen from the above that in the case of a *synthetic leasing* the separation from the sponsor company is of outstanding importance in respect of the *economic activity* (the connection with the lessee cannot be exclusive), the *risk bearing* (in the case of the end of the lease agreement and a capital investment bearing risk) and the exercise of *certain management rights* (the real property was constructed to the lessee's specifications). Special emphasis should be placed on the fact that a leasing transaction effected through the involvement of an SPE can be treated by the company in a different way in its tax and financial statements (balance sheet, income statement, cash-flow report). This can be possible since the tax authority and the system of accounting rules (GAAP) qualify leasing transactions on the basis of different criteria. It is more expedient to classify a leasing transaction as a financial leasing for the tax authority as the tax burden can be best reduced in this way, while in financial statements the operational leasing is undoubtedly the noticeably more favorable type. Thus the company can enjoy both the financial and the tax advantages on the basis of the possibility of the joint definition of both types.¹¹

2.3. The SPE aspects of securitization

In the course of securitization, the sponsor company purchases certain obligations in order to place them into or sell them to an SPE. A company possessing a credit institution license can sell or place its own obligations to an SPE. The SPE issues securities backed by the obligations which provide the cash collateral for the timely payment of obligations deriving from securities bearing various risks. Securities issued by the SPE are asset-backed securities (ABS). If the obligation is only mortgage, the SPE issues mortgage-based securities (MBS). If the portfolio of the SPE includes other obligations (auto loans, student loans, credit card receivables or trade receivables) besides mortgage credits, the SPE decides on issuing collateralized debt obligations (CDO). The particular securities issued by the SPE in this way may carry different risks. The issuing SPE can achieve this by placing assets with different risks behind securities with different risks. Thus there are senior, junior and mezzanine securities (mixed: containing debt and membership) and securities involving only membership. These securities carry higher and higher risks in the order of this listing since assets with smaller and smaller chances of repayment (carrying higher risks of non-payment) are placed behind the different types of security. This process is called division into tranches or slices.¹²

It should be noted that in the United States following the crisis of 2007-2009, this slicing induced a new regulatory solution to the problem of asset-backed commercial papers (ABCP) most saturated with SPE abuses – with good justification as this case lacked transparency towards investors the most. Since the adoption of the Dodd-Frank Act¹³, this has been the legal framework for all this. The provisions pertaining to SPEs of this otherwise quite stringent and comprehensive regulation can basically be approached from two directions. On the one hand, the financial institution originating the SPE or performing administrative tasks must obtain at least 5 % of the SPE obligations in the course of the issue of the commercial papers.¹⁴ On the other hand, the financial institution originating the SPE or performing administrative tasks must also obtain a share of the particular tranches of the portfolio¹⁵.

SPEs play a multifold role in the course of securitization. On the one hand, an SPE is applied if the originator of the SPE wants to have access to the present value of the obligations prior to their maturity. A reason for this can be the compulsion of liquidity, in other words to increase the amount of cash necessary to retain liquidity, however, the utilization of a favorable market situation and thus making capital available for investments in further obligations stand typically in the background of such a realization of obligations. In this way, the amounts of commission projected to the particular portfolios can be realized as profit in the case of each bought and sold portfolio when transferring further portfolios to the SPE. In this way, an effect of leverage is produced by the same credit institution source yielding multiple portfolio income. The amount of leverage corresponds to the number of times this capital can be negotiated by purchasing the obligation and placing it into an SPE. In the case of an SPE not created with the purpose of securitization, the creator is a sponsor, while in the course of securitization the creator is an originator, which well indicates the double role of the creator of an SPE. This legal distinguishing is even more important in the course of securitization, this is why in several cases the firstly created SPE transfers the obligations to another SPE to make their original owners as remote as possible. This fact is important for two reasons, on the one hand, to keep the obligations placed in the SPE intact from the bankruptcy or liquidation of the creator, on the other hand, to make them as remote as possible for the company so as not to be included in its financial statements. This latter reason is important again for two reasons, on the one hand it improves the company's indebtedness indicators by not having to continuously finance the obligations from the financial market and for the very same reason it does not run the interest rate risk, in other words it will not suffer any surplus costs in the future due to negative changes in the interest rates since it has transferred such risks borne by the obligations to the owners of the securities issued by the SPE. On the other hand, for the creating company, which has transferred its obligations in this way, making provisions is not obligatory in respect of the obligations of debtors defaulting on or delaying payments.

In order for a new and unknown company, the obligations of which are secured by a third party which intends to be as

remote from the obligations portfolio as possible, to be attractive for investors the opinion of an independent but reliable person is needed. This independent person is the legal institution of the credit insurer. The role of credit rating agencies is so complex that it should be treated in a separate study. This study covers only the aspects and criteria of rating and the documents necessary for that purpose.

2.3.1. The role of credit rating agencies in the course of securitization in respect of SPE independence

Credit rating agencies examine first of all the independence of the SPE in respect of the full delimitation of the assets of the SPE from the creating company in the case of bankruptcy and liquidation. This independence concerning the commencement of bankruptcy or liquidation proceedings is guaranteed by the person of the director who is independent of the company as without the consent of this member of the Board of Directors the SPE cannot lawfully decide on initiating the bankruptcy or liquidation proceedings. A further guarantee is the double nature of SPEs, which has already been referred to, according to which when the first SPE places obligations into a new, second SPE, the second SPE issues securities as collaterals for the obligations. Improved safety against the concealment of assets is provided for investors by the fact that the particular SPEs perform their activities as exclusive activities, which substantially diminishes the risk of bankruptcy and liquidation since the activities are restricted to securitizing obligations, thus late debt payments cannot be generated by any other activity.

The other essential aspect of the scrutiny by credit rating agencies is to examine the genuineness of the sale of the securities, in other words to check whether the obligations actually part from their transferor. This true sales certificate is issued by the legal advisor of the transaction.¹⁶ Such a certificate is issued on condition that the residual obligations and the securities issued by the SPE embodying the obligations purchased back cannot be possessed by the creator of the SPE. For issuing the appropriate rating, the credit rating agency also needs to be satisfied that a non-consolidation opinion is also issued by the legal advisor.

It is clearly perceivable from the above that material, contentual delimitation entrenched by legal tools is also of utmost importance in the case of SPEs created in the course of securitization. For if the obligations in the securities were involved in the process of bankruptcy or liquidation as the collateral for the obligations against the creating company or the issuing SPE in the case of the bankruptcy or liquidation of the creator of the SPE, then the collateral for the securities issued by the SPE would fully or partially cease to legally function as secured collateral.

In what follows, first the SPE characteristics of the Quaestor scandal and then those of the Enron scandal will be analyzed.

3. THE ROLE OF SPEs IN THE QUAESTOR SCANDAL¹⁷

The series of events becoming infamous as the broker scandals of 2015 in Hungary highlighted the fact that *Quaestor Financialis Hrvirva* and *Quaestor Értékpapír Zrt.* were SPEs similar to the SPEs in the American corporate scandals and played a role in creating it. This role is well delimitable in so far as the

injured investors subscribed to the bonds from *Quaestor Financial Hrvirira* as the issuer and not directly from *Quaestor Pénzügyi Tanácsadó Zrt.* as the parent company and the bonds were marketed by *Quaestor Értékpapír Zrt.* The special purpose entity nature of *Quaestor Financial Hrvirira* is referred to in the prospectus of the bonds, which defines the enterprise as a *business entity with a special purpose*. The situation of *Quaestor Értékpapír Zrt.* is somewhat different from it since it dealt with marketing securities since 1993, in a broader sense with the issuing, marketing and agency activities of the group. Although its sphere of activities is less specific compared to that of *Quaestor Financial Hrvirira*, and is not an operation exclusively projected to a single group of transactions, it constitutes a well delimitable unit. Its SPE character cannot be called into question as the international practice of the operation of special purposes entities offers a wide range in respect of broader and narrower aspects. The designation special purpose entity can justifiably and rightly be used from legal persons created for a single group of hedging transactions to companies established for managing long-term (even several-year-long) losing positions.

In our view, the prime characteristic of a special purpose entity is neither the fact whether the creators of the legal entity states the SPE nature of the undertaking, nor the fact whether it realizes a single, exclusive purpose within the activities of the group, but the fact that *it realizes one well delimitable group of the strategic objectives of the parent company in the form of an operative undertaking separate in its legal entity*.

The question as to whether there might be legal or ethical aversions to or criticisms of the application of SPEs is frequently raised in connection with the above SPE formation of the Quaestor group as well as in connection with the European (e.g. *Parmalat*) and American (e.g. *Enron*) corporate scandals and economic abuses. Concerning the said abuses, it is true that public opinion seems to show a distrust of SPEs in Western Europe and in the United States. Can the very same be said about the application of special purpose entities in Hungary too? This is a question posed by the case of the Quaestor group.

1) SPEs in respect of accounting independence¹⁸

As it has been analyzed in the foregoing, in the United States before 2007, the basis of the application of SPEs as companies with a separate legal personality was independence taken in an accounting sense. The American accounting principles (*Generally Accepted Accounting Principles – GAAP*) afforded a broad opportunity for not having to consolidate the financial reports of the SPE into the financial statement of the parent company. The companies of the *dotcom* sector basically relied on this opportunity before 2002, when they had their losses managed by subsidiaries; and also the companies owning the beneficiary positions of *subprime* loans constituting the basis of the crisis of 2007-2009, when they publicly offered the very same loans as obligations in the form of securities to investors.

In Hungary Act C of 2000 on Accounting defines the concepts related to consolidation and provides for the cases in which the financial reports of undertakings are not to be consolidated.

It can clearly be seen from the prospectus of *Quaestor Financial Hrvirira* issued in 2015 that this undertaking was a subsidiary owned by *Quaestor Pénzügyi Tanácsadó Zrt.* in 100 %, while *Quaestor Értékpapír Zrt.* was a subsidiary owned by *Quaestor Pénzügyi Tanácsadó Zrt.* in 85,79 % and at the same time were both undertakings involved in the consolidation of the parent company. Accordingly, the chance of applying SPEs induced exclusively by the motive for accounting independence can clearly be excluded.

2) SPEs in respect of prospectus liability¹⁹

It is clearly seen in respect of the *Quaestor* issuance that besides accounting independence, the application of an SPE may have *liability* aspects entailed by the separate legal personality of the SPE as an independent issuer.

Section 29 (1) of Act CXX of 2001 on the Capital Market (hereinafter CMA) provides for the issue of *prospectus liability* in line with *Directive 2003/71/EC* amending *Directive 2001/34/EC*. Under this provision, the *issuer, the dealer in securities, the person providing guarantees²⁰ and the offeror or the person requesting admission of the securities for trading on a regulated market* will be liable for the damage caused to the holder of the security by the misleading contents of the prospectus or by concealing information.

Under the provisions of the CMA, in the case of the Quaestor group, liability for the prospectus is borne by *Quaestor Financial Hrvirira Kft.* as the issuer and *Quaestor Értékpapír Zrt.* as the dealer. The prospectus meets these formal requirements as the declaration of liability clearly specifies the person of the issuer and the dealer. However, it is of importance that while in Hungary prospectus liability is not joint and several but is subject to the agreement of the participants under the CMA, in respect of the issuance of the Quaestor bonds *Quaestor Financial Hrvirira Kft.* and *Quaestor Értékpapír Zrt.* as issuer and dealer assumed joint and several liability. The agreement – considering that the two legal entities can be jointly and severally obliged – does not violate the interests of the investors. At the same time, *Section 29 (1) of the CMA* prescribes that somebody must assume liability for all the information contained (or for the lack of information) in the prospectus even in the case of a valid agreement.

By contrast, the parent company, *Quaestor Pénzügyi Tanácsadó Zrt.* avoided liability as it did not participate in the issuance either as an issuer or as a dealer, neither did it undertake surety (guarantee) for the rights inherent in the securities.

However, the question raised as to whether the fact that the data contained in the consolidated balance sheet of the parent company contradicted the data contained in the balance sheet submitted to Companies House and contained in the prospectus could be deemed only a technical fault or not. For while the annual balance sheet accounts of *Quaestor Pénzügyi Tanácsadó Zrt.* for 2013 contained HUF 10.397 billion equity and HUF 58.289 billion balance sheet total, the balance sheet data for 2013 (that is the same year) pertaining to the parent company in the prospectus of the HUF 70 billion bond issue of 2014-15 contained HUF 6.446 billion equity and HUF 102.711 billion balance sheet total, which difference may have been caused by the capital reserve since unfortunately the prospectus did not

detail the capital structure in such a depth. This mistake gained special importance when there were changes in the ownership in 2015 as in this case it was clear that equity and within it capital reserve functioned as a kind of reserve in the course of restructuring the assets of the company.

Due to the movement of capital, the relationship between the SPE and the parent company noticeably changed as according to the minutes taken at the general meeting of *Quaestor Pénzügyi Tanácsadó Zrt.* held on March 16 2015, the consideration for the bonds issued by *Quaestor Financial Hrvirira Kft.* was used for raising the capital of *Quaestor Pénzügyi Tanácsadó Zrt.* in the manner that out of the HUF 57.2 billion bond debt HUF 5.2 billion was used for subscribed capital increase and HUF 52 billion was placed into capital reserve in the balance sheet of *Quaestor Pénzügyi Tanácsadó Zrt.*²¹

What is even more conspicuous is the fact that at the level of consolidated balance sheet data the prospectus did not contain the amount of HUF 17 billion granted by MFB (Hungarian Development Bank) as loans between 2003 and 2008. In the case of a group with equity of *HUF 10 billion*, it certainly reached a substantial measure as the amount of the loan was nearly twice as much as the equity and almost four times more than the subscribed capital (*HUF 4.5 billion*). Thus it is quite understandable why the group refrained from assuming prospectus liability in the name of the whole group and why it created *Quaestor Financial Hrvirira Kft.* established in 2007. However, in this case the interests of the investors were severely injured as in the case of an operating group, past data²² are the best indicators of future performance in respect of expected results and *cash-flow*, which might later be collaterals for an issue of securities.

3) *The relations of Quaestor Financial Hrvirira Kft. (SPE) and Quaestor Pénzügyi Tanácsadó Zrt. (parent company)*

In respect of *Quaestor Pénzügyi Tanácsadó Zrt.* and the SPEs participating in *Quaestor* transactions it is continuously noticeable that the spheres of activity delimited and separated from each other are performed by separate legal entities. Both the nature of the transactions and the contents of the prospectuses (with special regard to prospectus liability) seem to verify that the delimitation of the SPEs as regards liability was not among the objectives of the group. The fact that the prospectus defines their liability as joint and several is indicative of it. At the same time, in respect of the parent company and the SPEs, the operative processes of the issue of securities were totally separated and liability was entirely borne by the undertakings participating in the issue and marketing of the papers.

Nevertheless, *Quaestor Pénzügyi Tanácsadó Zrt.* made the decisions concerning the assets deriving from the issuance and actually exclusively by using them for the benefit of other undertakings of the group. Although the nominal capital of *Quaestor Financial Hrvirira Kft.* never exceeded *HUF 10 million*, its capital was never raised in proportion to the volume of the securities issued. The financial statements of the company showed that it was only slightly profitable between 2007 and 2014, thus its profit was not sufficient to cover the surplus risks originating from the increased volume of the issuance.

The situation was different in the case of *Quaestor Értékpapír Zrt.* marketing the securities as it had over *HUF 1 billion* issued capital²³. In this case there would have been no need for collateral for the whole volume of the issue, only for the exchange differences deriving from the marketed portfolio and the own-account transactions.²⁴

It is an economic contradiction that concerning the two companies, it is the issuer whose capital condition is markedly weaker, and this can lead to the conclusion that it was established with a view to avoid possible pecuniary liability.

Finally, it should be claimed that the capital history of neither company reflects the increasing historic volume of the issues, which is as follows, between 2001 and 2004 approximately *HUF 10 billion*, in 2007 *HUF 50 billion* and since 2013 *HUF 70 billion*.

It appears that our original question is answered by the *Quaestor* case, namely the application of special purpose entities cannot be free from legal and ethical concerns in Hungary either and they may become subjects of abuses in the current regulatory circumstances.

The role of SPEs in the Enron scandal²⁵

A special purpose entity – Most of the companies that became infamous in connection with the *Enron* case were so called *special purpose entities (SPE)*. A *special purpose entity* is a legal entity created for a special purpose – for example to bear risk. The most important question that arose with regard to the sphere of activity of the *Enron* subsidiaries as special purpose entities was how they could operate independently of their parent company in respect of accounting. This was needed because *Enron* transferred substantial amounts of loss to these companies, through which these were not included in its own balance sheet. This was the key to *Enron* permanently, from time to time producing excellent financial indicators.

Concerning the use of SPEs, it should be mentioned that since the infamous scandals of the *Enron* case, the term special purpose entity has been used with an unpleasant taste in the mouth and with an increasing distrust in American business terminology. For there is a noticeable contradiction in the functioning of the SPEs playing a central role in the scenario of *Enron* frauds, which is highlighted also by *David A. Westbrook* in his study analyzing the consequences of and lessons to learn from the *Enron* case: SPEs are created for the particular, specific purposes of their creators, nonetheless, their independence in accounting issues is of outstanding importance.²⁶ As we will see later, this issue was decisive in some of the fraudulent transactions of *Enron*.

In many respects, the *JEDI–Chewco* case²⁷ may be perceived as a pattern among the fraudulent transactions of the *Enron* subsidiaries. Later the *JEDI* scheme served as a model for the creation and operation of several other subsidiaries used for face-lifting the financial indicators of *Enron* and concealing its losses.²⁸

The story of *JEDI LP* began in 1993, when *Enron* and *California Public Employees' Retirement System (CalPERS)* established a *limited partnership* worth of USD 500 million under this name.²⁹

JEDI is an acronym standing for *Joint Energy Development Investment*. *Enron*, as a *general partner* and *CalPERS*, as a *limited partner* both contributed USD 250 million, the capital contribution on the side of *Enron* took the form of providing its own shares. *JEDI* was a *special purpose entity*, in other words a legal entity with a special purpose, like many other *Enron* subsidiaries.³⁰

Since *JEDI* was regarded independent to a sufficient extent – considering the relevant provisions of *GAAP* – its accounting was separate from that of *Enron* and the revenues and losses generated in the sphere of activity of *JEDI* did not have to be included in the quarterly balance sheet of *Enron*.³¹

Due to this, *JEDI* was the first so called “*off the balance sheet*” *SPE*, in other words a special purpose legal entity the financial indicators of which were separate from those of *Enron*, through which it was suitable for concealing the financial losses of *Enron* as its losses did not appear in the balance sheet of *Enron*.³²

The key to this accounting independence is to be found in the relevant provisions of *GAAP*. Under the *Securities Act of 1933* and the *Securities and Exchange Act of 1934*, listed joint stock corporations have to make a declaration on their financial status in the form of quarterly reports. These quarterly statements must be made in line with the guidelines of *GAAP*. Under the provisions of *GAAP*, if a joint stock corporation – in our case *Enron* – has an interest in the operation of another legal entity – in our case in *JEDI* – and this other legal entity is sufficiently independent of the joint stock corporation having an interest in it, then its balance sheet does not have to be included in the quarterly report of the joint stock corporation.³³

JEDI, 50 % of which was under the ownership of *CalPERS*, satisfied these criteria. Although *Enron* was the general partner, it granted a greater space to *CalPERS* in directing *JEDI* by a bilateral agreement. Due to this, in the beginning *Enron* lawfully separated the financial indicators of *JEDI* from its own quarterly reports.³⁴

The operation and the financial independence of *JEDI* were suitable for becoming one of the schemes for frauds applied by *Enron*. The scenario was as follows – simplified to the extreme – *Enron* entered only the revenues but not the losses deriving from dealings with its subsidiaries into its books. Accordingly, *Enron* did not include the expenditures and losses of *JEDI* into its own balance sheet. However, the revenues originating from its interest in *JEDI* were entered into its books, thus improving the financial indicators of the company. With this method *Enron* could enter as receipt a substantial “fictitious” capital, which actually did not exist, still was capable of enhancing the investors’ trust. Everything ran smoothly in the next four years.

However, in 1997 the situation of *JEDI LP* dramatically changed. *Enron* wanted to create a new investment of USD 1 billion under the name *JEDI II*. *Enron* would have liked *CalPERS* to invest in *JEDI II*, but at the same time it knew that the financial situation of *CalPERS* would not allow *CalPERS* to remain an investor in *JEDI* as well. To this end, *CalPERS* first of all had to dispose of its holding in *JEDI*.³⁵

Thus a purchaser was needed who would buy the holding of *CalPERS*. However, no external buyer turned up. This caused a problem because *Enron* could not buy out *CalPERS* as in

this case *JEDI* – getting under the 100% ownership of *Enron* – would have lost its former independence under the provisions of *GAAP* and its losses would have been included also in the balance sheet of *Enron*. This was what *Enron* wanted to avoid by all means. In this case it would have lost 40 % of its revenues of 1997 and the extra expenditure of USD 711 million appearing in its balance sheet in this way would have markedly limited the dividends of shareholders: they would have received around USD 311 million less.³⁶

It was easy to predict the consequences: the trust of the investors would have been eroded, resulting in the mass sales of *Enron* shares. There would have been a substantial oversupply of the securities of the company causing their rate to plunge in flash crash.

Enron decided to create an investor which could buy out the holding of *CalPERS* in *JEDI* and at the same time to retain the semblance of independence.

For this purpose *Enron* created an *SPE* the independence of which was only pretense. Consequently, the independence of *JEDI LP* of *Enron* could only be pretense from 1997 too.³⁷

The new *SPE* was established under the name *Chewco*, with the single purpose of being the partner of *Enron* in *JEDI*. The gatekeepers of *Enron*, *Vinson & Elkins* as a law firm, *Barclays Bank* as the investment bank and *Arthur Andersen* as an accountant also actively participated in the series of fraud necessary to create *Chewco*.³⁸

Chewco was established in 1997. Being an *SPE* itself, it had to meet two conditions to avoid its accounting being consolidated with that of *Enron*. These conditions were the requirements of accounting independence. On the one hand, an independent owner partner was needed who would be fully separate in person from the sponsor, that is from *Enron*.³⁹

On the other hand, the independent partner had to effect a 3 % capital contribution. According to Securities and Exchange Commission (SEC) directions, this 3% contribution had to be a genuine 3 % risk taking, in other words no guarantees could be requested to secure it.⁴⁰

However, *Chewco* did not meet either of the requirements. The “independent” partners were *partnerships* and limited liability companies the activities of which were coordinated by one of the employees of *Enron*, *Michael Kopper*. *Kopper* and the ownership structure under his direction operated according to the directions of *Andrew Fastow*, the chief financial officer of *Enron*, for which they were generously rewarded.⁴¹

At its foundation – in November 1997 – *Chewco* did not have a capital contribution which had been effected by an independent partner. Its assets comprised bank loans, the repayment of which was guaranteed by *Enron*. Consequently, no actual risk was assumed by the independent partners.⁴²

Barclays investment bank granted a loan of USD 240 million to *Chewco* to enable it to buy out the holding of *CalPERS* in *JEDI LP*. However, the repayment of this loan was guaranteed by *Enron*.⁴³

Since *Enron* was aware of the fact that *Chewco* did not meet the requirements of accounting independence on the basis of the situation upon foundation, it several times attempted to

restructure its assets. A substantial part of the assets of *Chewco* still originated from bank loans guaranteed by *Enron*. In addition, *JEDI* itself also lent money to *Chewco*, and the partners also effected further contributions. *Barclays* provided loans for paying these contributions, the repayment of which was again guaranteed by *Enron*. It is also remarkable that while *Barclays* granted a loan of USD 11.4 million for the contribution of the investors, it took back USD 6.58 million, as collateral for the repayment of the loan from *JEDI* in secret.⁴⁴

In conclusion it can be claimed that *Chewco* never possessed the required 3 % independent investment, actually *Enron* guaranteed the repayment of the loans serving as the basis of the investments, creating a situation as if they had been effected from its own money.⁴⁵

After all this, *Chewco* was nothing else than “*Enron* wearing a mustache.”⁴⁶

The *JEDI-Chewco* model later served as a model for the creation of several *SPEs*. These, as it has been mentioned, were used by *Enron* to over-evaluate its profits and conceal its expenditures in its quarterly reports. These rosy financial indicators made stock exchange analysts rate *Enron* shares to be worth buying.⁴⁷

The *Enron-JEDI-Chewco* triangle itself served as the framework of numerous fraudulent financial transactions. *William Powers* named several of them in the *Powers Report*, the following is a non-exhaustive list:⁴⁸

- Both *Enron* and *JEDI* made amounts of money available to *Chewco* and personally to *Kopper*.
- *Chewco* paid amounts of money to *Enron*, possibly in consideration of *Enron* guaranteeing the debts of *Chewco* to *Barclays*. Amounts received in this way were immediately marked as profits by *Enron*.
- *JEDI* effected payments as organizational fees to *Enron*.
- An increase in the current price of *Enron* shares owned by *JEDI* was entered as revenue in the books of *Enron*.

JEDI-Chewco transactions came to an end in 2001, when *Enron* decided that the construction created in such a way no longer served its financial purposes. Accordingly, it bought out the holding of *Chewco* in *JEDI* – under quite preferential terms – what’s more, it paid the tax after the income of the investors deriving from this.⁴⁹

However, in October 2001 – due to the growing interest of the media and the Securities and Exchange Commission – the leadership of *Enron* dealt with the case of *Chewco* again. The transactions of *Chewco* were reviewed once more and it was established that *Chewco* actually did not have independent owners. Consequently, *JEDI* was not independent either, given that it had no other owners besides *Enron* and *Chewco*. For this reason *Enron* made its financial statements again with retroactive effect as from November 8 1997 but this time the financial indicators of *JEDI-Chewco* were also built in. According to the new statements, the revenue side got thinner by USD 1.048 billion, while expenditures grew by USD 2.585 billion. This greatly contributed to the fact that investors’ trust in *Enron* eroded and the stock price of the *Enron* shares collapsed. Within a month, *Enron* declared bankruptcy.⁵⁰

b) The collateral case of *LJMI*

The *SPE* called *LJM Cayman LP*⁵¹ was created in 1999. As regards its form, it was a *limited partnership*. As regards its function, it was established to secure the stock exchange investments of *Enron*. The assets of *LJMI* consisted of *Enron* shares deriving from *Enron* itself thus its capital strength depended on the fluctuation of the current price of the *Enron* shares. It follows from this, the collateral acts entered into with them actually meant pretense collateral. Three major financial transactions are linked to *LJMI*. In what follows, only the most widely known hedging transaction, *Rythms Netconnection*⁵² is treated.⁵³

The antecedents of the case date back to March 1998, when *Enron* decided to buy 5.4 million *Rythms* shares. At that time *Rythms Netconnection* was a – formerly privately owned – limited liability internet provider company right about to enter into open trading on the stock exchange. *Enron* could acquire shares at USD 1.85 each. The acquisition cost almost USD 10 million. *Enron* could realize a huge price-earning on *Rythms Netconnection* block of shares on the first day: the shares purchased at USD 1.85 were worth USD 69 at the end of the day.⁵⁴

Nevertheless, for the time being *Enron* could not realize the price earnings made on the *Rythms* shares. Its reason was that it had formerly entered into an agreement with *Rythms Netconnection*, under which *Enron* was obliged to hold the shares until the end of 1999 and was allowed to sell them only afterwards. However, according to *GAAP* rules, such investments – a holding in another public limited company – could not be booked as profit in the balance sheet due to the uncertainty of the future price development of the shares concerned.⁵⁵

In addition, *Enron* assumed an obligation by forward contracts to buy *Enron* shares at a fixed price from an investment bank. The price of the *Enron* shares was well above the fixed price thus the dealing promised to be good. The only problem was, a stock company basically could not recognize profits through the price increase of its own shares.⁵⁶

On June 18 1999, a group of the executive officers of *Enron*, *Andrew Fastow*, *Kenneth Lay* and *Jeffery Skilling* decided to settle the two said problems simultaneously by the method well-known from the scenario of *Enron* frauds, by the help of an *SPE*. This *SPE* was *LJMI*, by the help of which *Enron* could realize the profit originating from the said forward contracts and at the same time could conduct a hedging transaction to secure the price fluctuation of the *Rythms* shares.⁵⁷

Enron provided *LJMI* with the *Enron* shares involved in the forward contracts. The task of the newly formed *LJMI*, whose assets comprised mainly *Enron* shares, was to conclude a purchase option for the collateral of the profit originating from the increase in the price of the *Rythms* shares.⁵⁸

The terms of the purchase option concluded for the packet consisting of *Rythms* shares were favorable for *Enron*, as *LJMI* assumed an obligation to buy the *Rythms* shares at USD 56 each upon expiration of the deadline stipulated, regardless of their actual price on the stock exchange. Through this agreement *Enron* ensured a substantial part of the huge profit made on the *Rythms* transaction.⁵⁹

A closer examination reveals that this hedging transaction showed serious weaknesses. *LJM1* was not well-capitalized enough to bear the risks deriving from the transaction. As the assets of *LJM1* consisted of *Enron* shares, in the case of an incidental fall in their price it might not have had the necessary wealth to perform the assumed obligation. In the case of the price of *Enron* and *Rhythms* shares both falling, *Enron* could have been at best partly hedged by this purchase option.

Neither could this option hedge further profits on the price of *Rhythms* shares as it was concluded for a pre-determined fixed price. *Enron* and *LJM1* concluded further hedging transactions with each other to cope with the situation, though with a modest success. Finally, in the first half of 2000, upon the expiry of the agreement entered into with *Rhythms Netconnection* for holding the shares, *Enron* disposed of the *Rhythms* shares, the price of which was decreasing.⁶⁰

After this, *Enron* did not need the hedging transactions any longer. In the course of their termination *Andrew Fastow* and other *Enron* employees obtained substantial profits through their interests.⁶¹

c) *LJM2* and *Raptor* transactions

The SPE called *LJM2* was established on 11 October 1999 upon the advice of *Andrew Fastow*. The act was based on the unanimous resolution of the board, by which it actually declared that *Fastow's* participation in the operation of *LJM2* did not jeopardize the interests of *Enron*.⁶²

The operation of *LJM2* was based on the scheme we have already become familiar with – in the sphere of operation of *JEDI* and *LJM1*. The external investors of *LJM2* were mainly economic organizations but the actual direction was in the hands of *Fastow*, who was aware of the internal affairs of *Enron* and *LJM2*. The two entities could manage more efficient business mechanisms through his direction than they could have if they had been entirely independent business partners.

The financial transactions tied to *LJM2* – reprehensible in several cases from a legal point of view – are the so called “*Raptor*” transactions. “*Raptor*” enterprises mean legal entities which were created and operated by *LJM2* for arranging these financial transactions. Knowing the fraudulent transactions of *JEDI* and *LJM1*, it is no surprise that three out of the four *Raptors* were established by a capital contribution comprising *Enron* shares.⁶³

Raptor I – The first such *Raptor* company was an enterprise established on 18 April 2000 under the name *Talon*. The two parties to the foundation were *LJM2*, which effected a USD 30 million cash contribution and *Enron*, which contributed to the foundation with USD 1,000 in cash and other obligations – mainly shares – worth USD 50 million. *Talon* was used by *Enron* for concluding hedging transactions – according to the scheme already described.⁶⁴

The problem was that *Talon* assumed the obligation to pay USD 41 million in cash to *LJM2*, which may have been the consequence of an oral agreement between *Enron* and *LJM2*. The problem was caused by the fact that – as we have seen at the foundation – *Talon* did not have such an amount in cash. So

it had to get hold of money to be able to pay *LJM2*. In the end the cash was raised by selling a purchase option pertaining to *Enron* shares for USD 41 million to *Enron*. Thus, what actually happened was that *Enron* paid *Talon* to enable it to pay *LJM2*.⁶⁵

Raptor II and IV – Transactions which became known as *Raptor II* and *IV* – like the hedging transactions of *Enron* and *Talon* – were based on a *total return swap*. The essence of a total return swap is easy to understand, the parties promise to pay each other depending on the quoted value of an investment. Taking the *Enron–Talon* model as an example, such a collateral agreement looked like as follows: the total return swap concerned the shares under the ownership of *Enron*. If their price had increased, *Enron* would have had to pay cash to *Talon*, in the opposite case *Talon* would have been obliged to pay *Enron*. Transactions *Raptor II* and *IV* followed this procedure. *Enron* wanted to ensure the value of its investments.⁶⁶

However, these agreements were ungrounded in practice, taken into consideration the actual amounts of capital *Raptors* had. *Enron* arranged transactions *Raptor I, II* and *IV* with companies whose assets mainly consisted of *Enron* shares. In this case, the possibility of a simultaneous fall in the quoted value of investments had by *Enron* and the quoted value of the *Enron* shares had to be taken into account. In such a case, neither *Talon*, nor other *Raptor* companies would have had sufficient amount of assets to satisfy the well-grounded claim of *Enron*. Their liquidity decisively depended on the quoted value of *Enron* shares.⁶⁷

Raptor III – This transaction, as a hedging transaction was even shakier than the former ones were. *Enron* created *Raptor III* to cover the risks originating from the fluctuation of the quoted value of one of its major investments by a *total return swap* concluded with it. This investment was a substantial holding in *The New Power Company (TNPC)*.⁶⁸

However, the assets of *Raptor III* mainly comprised *TNPC* shares, meaning that if the quoted value of *TNPC* shares declined, the value *Raptor III* assets inevitably declined too. This may have entailed the consequence that *Raptor III* could not perform its obligation under the *total return swap* either.⁶⁹

Good luck avoided *Enron* and in order to ground the liquidity of the *Raptors* unable to pay, it needed to create several almost “byzantine” financial structures lacking transparency in the hope of the *Raptors'* economic situation changing for the better. However, this never happened.

4. CONCLUSION

In conclusion it can be claimed that the wide-spread use of SPEs made SPEs one of the acknowledged fundamental institutions of international company law. Nevertheless, the use of SPEs allows for a wide scope of possible interpretations both for its creators and those applying the law, including in particular tax authorities and authorities regulating accounting and financial reports.

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FOOTNOTES

1. NEWMAN Neal: *Enron And The Special Purpose Entities – Use or Abuse? – The Real Problem – The Real Focus* 13 *LAW & BUS. REV. AM.* 97 2007 pp.98-112.
2. NEWMAN, Neal: *Enron and the Special Purpose Entities Use or Abuse? – The Real Problem – The Real Focus* 13 *Law & Bus. Rev. Am.* 97 2007 p 99.
3. In its original meaning arbitrage means taking advantage of the price discrepancies of financial products available on different markets by their simultaneous and thus risk-free buying and selling. In this way the investor immediately

ensures the exchange rate difference of the two markets less the transaction cost as profit without the possibility of future changes in the exchange rate affecting this profit. In the course of regulation, the application of arbitrage includes the group of phenomena in which companies choose an activity or a venue for an activity with a more favorable regulation instead of one with a less favorable or more costly regulation.

4. ABRAMS Charles: *FASB's Failure to Regulate Off-balance Sheet Special Purpose Entities and The Downfall of Securitization* 12 *Asper Rev. Int'l. Bus. Trade L.* 39 2012 p.45.
5. Operational leasing typically works on the basis of the features of a rental agreement. Its purpose is the long term rental of equipment or right. In the case of financial leasing, following the expiration of the lease agreement the lessee either purchases the leased item under its market value (closed-end lease) or he has the right of first refusal, in other words he has the option to purchase the leased item but the lessee can decide whether he wants to exercise this right or not (open-ended lease).
6. Generally Accepted Accounting Procedures – GAAP accounting principles accepted in the United States and also used internationally.
7. FASB (Financial Accounting Standards Board) is a professional body of for-profit and not-for-profit organizations which determines and renews the internationally accepted and used accounting principles of GAAP (Generally Accepted Accounting Rules).
8. NEWMAN, Neal: *Enron and the Special Purpose Entities Use or Abuse? – The Real Problem – The Real Focus* 13 *Law & Bus. Rev. Am.* 97 2007 p.102.
9. FASB, Emerging Issues Task Force Issue 90-15 (1991)
10. FASB, Emerging Issues Task Force Issue 90-15 (1991)
11. NEWMAN, Neal: *Enron and the Special Purpose Entities Use or Abuse? – The Real Problem – The Real Focus* 13 *Law & Bus. Rev. Am.* 97 2007 p.105.
12. In the course of division into slices or tranches, the particular securities issued by the SPE got a portion of the obligations in a prescribed order, in other words they were awarded a prescribed share of the interest and principal payment returns on the securities portfolio of the SPE. During this process the obligations were first grouped into classes through classifying debtors with like credit ratings into groups considered homogenous. Then such groups were divided into smaller slices, tranches to ensure the given issue of securities the desired predictable cash-flow satisfying pre-determined criteria. In practice, the issue of securities could be tailored to the needs of investors or issuers in this way.
13. The *Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act)* came into effect on July 20 2010. The primary objective of the act was to avoid interventions financed by taxpayers. The *Dodd-Frank Act* introduced new agencies in order to systematically map risks and increase oversight of financial institutions. The *Dodd-Frank Act* also played an important role in extending shareholders' rights, for example concerning the remuneration of executive officers. On this issue see KECSKÉS András – HALÁSZ

- Vendel: A siker díja vagy a bukás ára? A vállalati vezetők javadalmazásának elmélete a pénzügyi válság tükrében. In: Jogtudományi Közlöny vol. LX 4 pp.180-191; KECSKÉS András: "Say on Pay" – Részvényesi szavazás a vállalati vezetők javadalmazásáról az Egyesült Államokban. In: JURA vol. XXI 1 pp.59-64; KECSKÉS András – CSEH Balázs: Elsöpörte-e az alpesi főn a vállalati vezetők javadalmazásának korábbi kereteit Svájcban? In: JURA vol. XXI 1 pp.224-235.
14. ADRIAN Tobias: *Dodd-Frank One Year On: Implications for Shadow Banking* Federal Reserve Bank of New York Staff Reports, no. 533 2011 December pp.4-5.
 15. In the course of division into slices or tranches, the particular commercial securities got a prescribed share of the interest and principal payment returns on the loan portfolio of the SPE. During this process the loans were first grouped into classes through classifying debtors with like credit ratings into groups considered homogenous. Then such groups were divided into smaller slices, tranches to ensure the given issuance of commercial securities the desired predictable cash-flow satisfying pre-determined criteria. In practice, the issuance of commercial securities could be tailored to the needs of investors or issuers in this way.
 16. DOLAN Patrick L.: *Lender's Guide to the Securitization of Commercial Mortgage Loans* 115 L.J 597 1998 pp.602-603.
 17. KECSKÉS András- BUJTÁR Zsolt: *Merre tart a gazdasági jogi szabályozás a Quaestor-botrány után I.* Gazdaság és Jog 2015 November pp.5-8.
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 20. The person undertaking surety (guarantee) for the rights embodied in the security.
 21. Cf.: PEARCE II, John A. – LIPIN, Ilya A.: *Special Purpose Vehicles in Bankruptcy Litigation*, 40 Hofstra L. Rev. 177 2011-2012 pp.177-233.
 22. See FISCH, Jill E.: *Rethinking the regulations of Securities Intermediaries*, 158 U. Pa. L. Rev. 1961 2009-2010 p.1970.
 23. According to the prospectus of the bond issue of 2014-2015 by Quaestor Financial Hrvirira, it was HUF 1.047.671.000.
 24. Companies marketing securities may suffer losses when the market price of the securities owned by the company and held for trading purposes moves to the negative direction compared to their purchase value. In the case of *own-account* transactions, the company tries to continuously make profit by utilizing its equity but if the market moves towards the opposite direction, the company may suffer losses in this way too, especially in the case of derivative transactions.
 25. KECSKÉS, András: *Felelős társaságirányítás HVG-ORAC* Lap és Könyvkiadó Kft Budapest 2011 pp.53-62.
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 28. See AGUIRRE, Garry J., *The Enron Decision: Closing the Fraud-free Zone on Errant Gatekeepers*, Delaware Journal of Corporate Law (2003) Vol. 28. pp.453–460.
 29. See WESTBROOK, David A., *Corporation Law After Enron: Possibility of a Capitalist Reimagination*, Georgetown Law Journal (2003–2004) Vol. 92. p.73.
 30. See AGUIRRE, Garry J., *The Enron Decision: Closing the Fraud-free Zone on Errant Gatekeepers*, Delaware Journal of Corporate Law (2003) Vol. 28. pp.453–460.
 31. See WESTBROOK, David A., *Corporation Law After Enron: Possibility of a Capitalist Reimagination*, Georgetown Law Journal (2003–2004) Vol. 92. p.73.
 32. See WESTBROOK, David A., *Corporation Law After Enron: Possibility of a Capitalist Reimagination*, Georgetown Law Journal (2003–2004) Vol. 92. p.73.
 33. See WESTBROOK, David A., *Corporation Law After Enron: Possibility of a Capitalist Reimagination*, Georgetown Law Journal (2003–2004) Vol. 92. p.74.
See also AGUIRRE, Garry J., *The Enron Decision: Closing the Fraud-free Zone on Errant Gatekeepers*, Delaware Journal of Corporate Law (2003) Vol. 28. pp.454–455.
 34. See WESTBROOK, David A., *Corporation Law After Enron: Possibility of a Capitalist Reimagination*, Georgetown Law Journal (2003–2004) Vol. 92. p.74.
 35. See AGUIRRE, Garry J., *The Enron Decision: Closing the Fraud-free Zone on Errant Gatekeepers*, Delaware Journal of Corporate Law (2003) Vol. 28. p.454.
See also WESTBROOK, David A., *Corporation Law After Enron: Possibility of a Capitalist Reimagination*, Georgetown Law Journal (2003–2004) Vol. 92. pp.77–78.
 36. See AGUIRRE, Garry J., *The Enron Decision: Closing the Fraud-free Zone on Errant Gatekeepers*, Delaware Journal of Corporate Law (2003) Vol. 28. p.454.
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Modern trends of the development of the international market of educational services

Annotation. *The article is devoted to the analysis of modern trends in the development of the international market of educational services, which is an important and actively developing branch of the world economy and the place on it of Ukraine. The international market for educational services is characterized by increased competition, along with traditional leaders, a number of countries are pursuing an active policy to promote their own interests in this field. The article examines the factors that influence the changing positions of different countries in the world market of higher education, the current problems of international education.*

Key words: *international market of visibility, regional market of the highest education, international education, academic mobility, export of basic services, transcondonna osvita.*

The main motivation to export educational services is to obtain significant funds and develop the economy. Education in the XXI century is becoming one of the fastest growing sectors of world trade in services. The Organization for Economic Cooperation and Development (OECD) estimates that around 140 million students are currently enrolled in 36,000 institutions of higher education. The international market of viscous industries is close to 100 billion dollar. According to UNESCO, in the world market for educational services, there are higher education institutions (HEIs) in more than 140 countries. According to statistics, a foreign student spends about one-fifth of his own expenses in the country of study, and four-fifths – for accommodation, meals, entertainment, etc.

Experts predict that in 10 years the number of students will double, largely as a result of the increase in the number of those who receive higher education in Asia and Europe. Under the influence of globalization processes, the number of students choosing to study outside their own country continues to grow; the report of the Organization for Economic Cooperation and Development (OECD) Education at a Glance 2012 shows that between 2000 and 2010, the number of foreigners entering universities outside their own country increased by 99% – from 2.1 to 4, 1 million people [6]. By 2025, according to the UNESCO forecast, the number of foreign students will reach 7.2 million. [8, p. 10].

If we talk in more detail about the volumes of the education market, then the assessments of specialists from different organizations are significantly different. According to the estimates of the World Trade Organization (WTO), the world market for education is 50-60 billion US dollars, while OECD experts believe that its size is 2 times inferior to the WTO estimates and equal to 30 billion dollars. Despite this, there is no

doubt about the huge size of this market, and its growth rates are also quite large. Evidence of this process is the statistics of the dynamics of the number of foreign students studying outside their countries.

The main segments of the world market of educational services are services in the field of primary, secondary and higher education, adult education services and other educational services not included in other segments. In accordance with the provisions of the GATS, the sale of educational services is carried out in four ways, including [7]:

1. “Consumption abroad.” Assumes the transfer of the consumer to the country where the service is made. In the case of educational services, this is the acquisition of education by persons on the territory of a foreign country. This method is most common in the world market of educational services.
2. “Transboundary” way. In this case, the border is crossed only by the service itself, and the consumer and producer at that moment are on the territory of different states. In the case of education, this is the acquisition of distance education. This way of supplying services became possible as a result of the development of communication technologies.
3. “Commercial presence”. Organization of the service provider of the country’s commercial presence on the territory of the other, where the service is to be provided. For example, there are the establishments of branches, representative offices in the territory of other states. This method is becoming more attractive for exporting countries, since it allows to cover those groups of foreign citizens who do not have the opportunity to go abroad for education. For example, since 2006 the number of branches of campuses of foreign universities in the world has increased by 43% [8].
4. “Presence of natural persons” implies the movement of individuals from the territory of one state to the territory of another for the provision of services. In terms of educational services, this is the mobility of teachers for working abroad.

The increase in export of educational services became one of the priority directions of foreign economic policy in many countries. A number of reasons can explain the growing interest of countries in the development of this segment of the world market of services.

First, the training of foreign citizens in the country’s higher education institutions is now bringing ever-greater economic benefits in the form of tuition fees, accommodation, food, transportation, entertainment, etc. For example, education was the third largest export item in Australia in 2008, the fifth item

in the US and Great Britain [9]. In 2008, the income from the training of foreign nationals in Australia was 12.6 billion USD [9], it was 20 billion USD in the United States [10], and 14.1 billion pounds in Great Britain [5].

Leaders in the world trade in educational services are the countries of North America, Western Europe and some Asian countries. Almost 60% of the total number of foreign citizens receiving education abroad is in the United States (19.6%), Great Britain (11%), Australia (7.6%), France (7.4%), Germany (6%), Japan (4%), and Russia (4%) [8, p. 194]. Despite the fact that the list of countries leading in the world trade of educational services remained virtually unchanged over the past decades, there is a tendency to reduce their market share. For example, the US share decreased by 1.6%, the United Kingdom by 1%, Germany by 3.4%, France by 2.6% compared to 2006. At the same time, new regional leaders are emerging as leaders in training foreign citizens: the PRC (1.8%), the Republic of Korea (1.5%), Malaysia (1.2%) and Singapore (1.2%) [8, p.196].

Almost 30% of all foreign students traveling abroad, accounted for only 4 countries: PRC (15.1%), the Republic of Korea (3.7%), India (5.8%), Germany (2.7%) [8, p. 204]. The specialties students choose for study abroad are business and management (23%), engineering (14%), humanities and arts (14%), social sciences and law (13%) [6].

Secondly, educational institutions strive to ensure the quality of education in the struggle to attract foreign students in accordance with international requirements. Inclusion of international components in the educational process inevitably leads to the reform in the system of training specialists and to increasing the competitiveness of an educational institution in the international educational space.

Thirdly, the training of personnel for foreign countries is becoming increasingly important in terms of spreading by the state of its achievements in the field of science and technology, language, values and culture, which influence the formation of the image and the country's position in the world community in one way or another. In addition, foreign students are also becoming an important source of population growth, a means of improving the demographic situation and the labor potential of the country. Thus, conducting an active immigration policy, the USA, Canada, Australia and a number of European countries receive about 1 million highly qualified specialists from among foreign citizens who have studied at universities of these countries during the year [6].

Globalization processes and market transformations change the demand structure in the labor market and cause new inquiries from consumers of educational services. Educational services, as products within the global market, have different qualitative and cost characteristics from elite to low quality. Knowledge received by consumers of educational services during their life forms new qualities of people, through which they, form different intellectual classes of a new society in the conditions of an innovative economy, in particular, a class of intellectuals. Ensuring the possibility of higher education for all segments of the population means confronting the social inequality, which is deeply rooted in history, culture and eco-

omic structure, and affects the ability of a person to compete. Geography, the unequal distribution of wealth and resources objectively determine the existence of groups of people with limited access to the global market. The growth of competition in the global market of educational services in the field of attracting foreign students has an economic basis: the cost of studying at universities for foreign students is higher than the cost of providing similar services to students in the country of the higher education institution.

In the context of globalization, the influence of the external environment and international competition on the transformation of national systems of higher education increased significantly; the determinants of development are changing; and the dominant components of higher education in the global market determine the priorities of the transformation of education systems in their totality in the context of ensuring their international competitiveness.

The main factors determining the choice of participants in the educational process of a particular higher education institution abroad are the language of instruction, the quality of higher education programs, the cost of training and immigration policies in the country; the same factors determine the level of competitiveness for exports of higher education services. In addition, the growth in the demand for international education is due to the economic and scientific expediency that consumers use services: in the long run, this can guarantee higher wages and better conditions for employment both in the domestic and foreign labor markets.

According to the Ministry of Education and Science of Ukraine, 63 thousand students from 146 countries of the world are studying in Ukraine. The share of Ukraine in the international education market by the number of foreign students is 1.5%. The amount of Ukrainian higher education services exports are given in Table 1. Ukrainian universities have sufficient potential to compete for the market share of educational services. In recent years, the number of foreign students increased significantly (Table 2). Foreign students education are attracted in Ukrainian by the relatively low studying and living cost, the fundamental nature of certain education areas (our physical, mathematical and chemical schools are recognized throughout the world) and the reputation of leading Ukrainian universities, which was preserved for many years.

As of the beginning of 2015/2016, the number of foreign students in Ukraine is 63,391. Of these, 165 persons are enrolled in the first and second levels of higher education (bachelor and master) and 63,226 people are enrolled in the third and the academic year (Doctor of Philosophy and doctorate). The universities of Kharkiv, Kyiv, Odessa and Lviv are the leaders by number of foreign students.

Most foreign students studying in Ukraine are from Asia. The geography of students from Africa is not so diverse; however, their number is also relatively significant. A very small percentage are citizens from the countries of the European Union. The total number of such students barely exceeds the mark of 50. Table 3 shows the number of students from different countries in Ukrainian universities.

Table 1: Amount of export and import of Ukrainian services in the field of education (according to the State Classifier of Ukraine DK 012-97 “Classification of Foreign Economic Activities”) during 2000-2014, ths. USD

Year	Education services, total			services in the field of higher education		
	Export	Imports	Balance	Export	Imports	Balance
2000	18540.5	3229.9	15310.6	17614.8	845.5	16769.3
2005	36030.7	4043.9	31986.8	31664.1	292.0	31372.2
2010	49198.0	6612.5	42585.5	44692.5	329.1	44363.4
2014	60540.4	9890.8	50649.6	55943.3	521.3	55421.9

Table 2: Number of foreign students studying in Ukraine

Academic year	Number of foreign students
2012/2013	61.4 thousand persons
2013/2014	70 thousand persons
2014/2015	63 thousand persons
2015/2016	more than 63 thousand persons

We cannot conclude that the demand for higher education services by foreigners is growing. Along with the decrease in the demand of foreigners for educational services of Ukrainian universities, an increase in the demand of Ukrainians for foreign education is observed. The dynamics of the departure of Ukrainian students abroad for the past five years has increased by 41.44% on average. The largest growth occurred to such countries as Poland (almost 4.5 times), Canada, Italy, Spain, Austria, Great Britain, and Slovakia (1.5 to 2.5 times). At the same time, there is a decrease in the outflow of Ukrainians to some countries, for example: the USA, Hungary, Sweden, Latvia, Moldova, and Belarus (from 10 to 45%). Regarding the structure of the most popular countries to which Ukrainians go to study, statistics shows that Poland (32%) and Germany (20%) were the leaders over the past five years. All other countries distributed the amount of Ukrainian higher education graduates roughly from 2 to 5%. The number of Ukrainian students which are studying only in European countries increased by a third over the last five years.

For Ukrainian higher education, the increasing export of educational services is beneficial, firstly, from an economic point of view, as the training of specialists for foreign countries is one of the most profitable items of income, especially in the context of poor financing of education. Secondly, the desire to attract foreign students prompts Ukrainian HEIs for educational activities, taking into account world standards of quality for education and training directions. With its significant export potential, especially in the field of higher professional education, Ukraine currently does not fully realize it, because our country accounts for about 1.5% of the total number of foreign students studying in the world. In the 2014/2015 academic year, 63,172 foreign students studied in Ukraine. However, according to experts, Ukrainian educational institutions have a much greater potential for providing educational services and can train about 500,000 foreign students [4, p. 213].

In order to assess the competitive advantages or disadvantages of Ukrainian education adequately, it is necessary first to analyze the requirements of the global market. Monitoring of the students' preferences shows that business education is

valued above all in the international market. Almost 20% of students study technical and engineering sciences and the most popular ones is information technology. Approximately the same number of students choose natural sciences. Medicine closes the list of preferences – 4-5%. In Ukraine, foreign students often choose medical and technical specialties, as well as double-diploma education programs for higher education according to international standard.

Informal education that should prepare people for rapid change is an important promising segment of the educational services export in Ukraine that will expand the export of educational services. This is a long-term concept of lifelong learning in Europe through training, seminars, etc. The development of e-learning and distance learning in the current conditions of intensive growth of the global Internet network is an important direction in expanding the scope of educational services in space and time. On-line education, which concept corresponds to the “life-long learning” paradigm, is the form of educational service offered by innovative universities. Over the past ten years, this area is undergone a significant transformation and is characterized by the formation of a global market for on-line educational services under the influence of technological developments and the development of Internet resources at the present stage.

The main preconditions for the emergence of open online training in developed countries is the massive demand for education throughout life; the desire of people to study according to individual curricula that do not fit into formal education programs; a constant rise in prices for formal education that cannot be adequately financed from state budgets; the desire of market participants for educational services to find an effective tool for attracting more students. The globalization of higher education implies that a higher education student can receive it in higher education institutions, both domestic and foreign (at home at branches and with the help of distance education). That is why taking into account the fact that the student acquires cross-border education mainly for his own money or the funds he attracts, the important characteristic of the “inclusion” of the country in the global educational space is the cash

Table 3: Geographical structure of the foreign students contingent in Ukraine, 2016

Asia		Africa		Europe	
country	Number of students	country	Number of students	country	Number of students
Turkmenistan	more than 14 100	Nigeria	3600	Great Britain and Northern Ireland	42
Azerbaijan	7600	Morocco	1500	France	8
Iraq	3600	Gambia	1500	Denmark	4
India	3500			Ireland	2
China	2300				
Uzbekistan	2100				
Jordan	1800				
Moldova	1700				
Georgia	1500				
Israel	690				
Tajikistan	422				
Kazakhstan	350				
Vietnam	348				
South Korea	60 persons				
Kyrgyzstan	30 persons				
Japan	13 persons				

flow from the export and import of educational services. At the same time, Ukraine does not look competitive enough on the market for providing higher education services. There is no full awareness that higher education can no longer be limited to the training of specialists for the local or national labor market. In fact, for the students, the whole world is open, and hence the need to ensure their competitiveness becomes a strategic goal for all universities

Online education should play an important role in raising the academic level of Ukrainian teachers, monitoring their global trends in education, their integration into the international scientific community and the expansion of international contacts. Online education is one of the tools for implementing the globalization processes of the transformation of higher education in Ukraine, which in the long run can ensure its competitiveness in the international educational space.

In the context of global processes of internationalization of education one of the promising directions of development of the sphere of higher education in Ukraine is the orientation towards the formation and effective implementation of export potential and on its basis further integration into the world educational space. The expansion of internationalization is facilitated by the exchange of students (the attraction of foreign students to the national educational space) and teachers, the franchising of educational services (the creation of foreign branches of higher educational institutions with the right to use its educational programs, technologies and issuing its diplomas), the export of educational technologies (meeting the needs of foreign consumers in educational services on a commercial basis by the subject of the national system of higher education), increasing the prestige of international exchange of knowledge through visits by representatives of universities internationally days of conferences, symposiums, seminars etc.

The status of educational services' export in each country is determined by the following factors:

- the prevalence of the language of instruction;
- economic and cultural attractiveness of the state;
- the authority of the country on the international level;
- the level of development of the national education system;
- the reputation of the university;
- the cost of studying and living;
- the flexibility of educational programs;
- level of support and support of foreign students;
- geopolitical, trade-economic, cultural-historical ties between the exporting country and the importing country;
- the level of advancement of national educational institutes in the global space.

As noted above, the world market for educational services has a significant financial content and, for a number of countries, the revenue from its operation is an important part of GDP, an increase in the export of Ukrainian educational services at this stage of the national economy development is a vital and promising direction for attracting additional financial resources in the educational sphere. Access to education, a wide range of educational services, a powerful intellectual resource and a high scientific and pedagogical potential should become the main competitive advantages of Ukrainian universities.

To increase the volume of exports of higher education services, it is useful to adapt international experience in the field of internationalization, informatization and mass education of higher education to the conditions of using the intellectual potential of Ukrainian universities. The quality of the intellectual potential of the university, as well as any higher educational institution, will be determined by the level of technology for the transfer of new knowledge in the global educational space. The quality of students' training and their ability to carry out

scientific research and effective innovation in future practical work is transformed into new qualities of staff, scientific results and innovative projects.

Conclusions. For Ukrainian higher education, expanding exports of educational services is beneficial, firstly, from an economic point of view: the training of specialists for foreign countries becomes one of the most profitable items of income, especially in the context of poor financing of education. Secondly, in terms of improving the quality of education: the desire to attract foreign students encourages Ukrainian universities to form a system of training specialists, taking into account the requirements of the world labor market to the quality of education and training.

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Security in modern theory of the firm and the concept of the company's financial architecture

ABSTRACT

The article deals with the theoretical aspects of determining the place and role of the corporate security category in modern concepts of the firm's theory. The interrelation of concepts "firm" and "corporation" is grounded, the general classification of existing theories of the firm is presented, the essence of the firm from a position of the different theories is considered. A system-integration approach is proposed in the study of this category. The importance of considering security as a component of the financial architecture of the company is emphasized.

Key words: security, corporation, theory of the firm, corporate theory, financial architecture, system integration theory of the firm.

INTRODUCTION

The importance of considering the security problem in the concept of the company's financial architecture in modern conditions is derived from the change in approaches to understanding the nature of corporate finance and an increasing role of the system integration approach in scientific research of the firm's theory. The concept of financial architecture, first proposed in 1999 by S. Myers [1], is based on the system integration approach to assessing the company's performance. Myers defines the financial architecture of the company as a combination of its financial characteristics, such as the form of ownership, the legal form of business organization, incentives, sources of financing and risk allocation mechanisms.

In modern conditions, the study of the difficulties and problems, threats and risks that accompany the activities of enterprises, is one of the general lines of development of the firm's theory. In this regard, the security problem gradually takes an adequate place in the theory of the firm, but it requires the modernization of the methodological basis for its study in line with modern advances in the institutional and evolutionary economy.

MATERIAL AND METHODS

A considerable number of publications have been devoted to the problems of the theory of the firm, but they have not paid enough attention to corporate security problems. Terminological diversity in corporation concept as a subject of modern economics has been reflected through the prism of the evolution of approaches to the firm's theory in different interpretation of the corporation, the firm, the organization and the enterprise in the works of G.Kleiner [12,13], D.Pletnev [6,7], L.Saakova [9], R.Gibadulin, I.Mardanov [10], S.Polonsky [16,17]. Questions concerning the terminology of the corporate financial architecture proposed by S. Myers

[1] found their reflection in the publications I.Ivashkovskaya, A.Stepanova, M.Kokoreva [2], N.Gortseva [3]. The works of these authors are devoted to determining the essence and components of the financial architecture, its impact on the efficiency of the company's activities, as well as the features of the formation of a financial architecture for groups of companies with cross financing within the group. The problem of security in the theories of the firm is investigated in the works of M. Korolyov, V. Tambovtsev. The analysis of the literature studied allows us to conclude that there is insufficient research into the problems of corporate security as an organic component of the theory of the firm.

The purpose of this publication is to outline the empirical reasoning of the need and role of researching security problem as an organic component of the company's financial architecture. The main methods that are used for reaching the goal were synthesis, detailing, logical generalization, comparison, analogy and structural-logical method.

RESULTS AND DISCUSSION

An important milestone in the development of the entire problem field of corporate finance was the concept of the company's financial architecture. For the first time, the term "corporate financial architecture" and the problems associated with it were voiced in the opening speech of S. Myers at the conference of the European Association of Financial Management and Marketing (EFMA) in Lisbon in June 1998. Financial architecture, according to C. Myers, means the entire "financial design of the business, covering the property (concentrated or dispersed), the organizational and legal form, incentives, ways of financing and distributing risks between investors" [Myers, 1999]. Whereas risk is a necessary and indispensable attribute of entrepreneurship, security is also an organic part of the corporate finance theory. However, the development of theoretical ideas about the security of a firm directly depends on progress in understanding the nature, functions, structure and evolution of this economic institution [4, p.54]. The main problem is that "disputes about the structure and functions of the firm have been going on for many years and it is hardly possible to talk about the formation of any single theory" [5, p.85].

When considering the nature of the firm, it is necessary to investigate the relationship between the concepts of "firm" and "corporation". The most relevant in this case is the research of those areas of the firm's theory, which are applicable namely to the corporation. Everyone knows corporate scandals with such

companies as Enron, WorldCom, Arthur Andersen, etc., which have exposed the existing gaps both in the theory, corporate legislation and the whole system of corporate relations.

It should be noted that the present stage of development of economic science is characterized by a partial merger of the concepts “firm”, “enterprise”, “organization” and “corporation”. The use of this or that term is largely depends not to differences in the object of research, but to the author’s belonging to one or another scientific school. Thus, the “political economists” use the term “firm”, representatives of the economic and mathematical direction use “enterprise”, researchers of the management theory – “organization”, and those who study problems of corporate governance and corporate finance – “corporation” [6, p.98].

At the same time, D.Pletnev in his publications [6, 7] delimits the investigated concepts. The scientist believes that it is appropriate to talk about a firm where it is a subject of market interaction, decision-making about prices, volumes of sales, assortment. The term “enterprise” should be used in relation to the business unit that produces goods and services. The term “organization” is most accurately describing the interaction of individuals in a hierarchical controlled system. When we consider an institutionally independent business unit, consisting of a multitude of interacting individuals and making independent decisions capable of evolutionary development, it will be more proper to use the term “corporation” [6, p. 100].

Simultaneously the phrase “theory of the firm” is widely used, mainly in relation to the corporation. In fact, the problematics of the studies of most theories concern precisely the firm as a corporation: the “principal agent”, the distribution of property rights, the structure of capital, dividend policy, and so on. A key feature of a corporation as a firm is the delineation of the functions of the owner (shareholder) and the manager. Shareholders, unlike the traditionally understood owner of a company (in the tradition of classical economic theory) are separated from the management of their property. Therefore, there is a contradiction between the managing corporation (top management) and its owners (shareholders). Therefore, most economic theories, especially institutional ones, are applicable namely to the corporation, and not to the firm as a system for converting the initial resources into finished products.

The beginning of the formation of the firm’s security theory rightfully belongs to the period of the monograph publication “Risk, Uncertainty and Profit” published by the American economist F. Noyt in 1921. In his work, the author had distinguished the main categories of security – the concepts “risk” and “uncertainty “. The system connection of the firm and risk was further justified by J. Schumpeter. Risk in Schumpeter’s interpretation is an indispensable attribute of entrepreneurship and a key condition for making a profit, although he rightfully didn’t associate the profit with a kind of peculiar risk premium [4, p.54]. The fruitful ideas of F. Knight and J. Schumpeter remained on the periphery of microeconomic research for a long time due to the dominance of the neoclassical paradigm.

Gradually, with the evolution of economic theory, a look on the firm as a participant in market relations had been also

changing. Theories of the firm were replenished and updated along with the development of economic science and economic theory as a whole. A diverse spectrum of company theories had appeared, each of them had been trying to explain the nature of the firm from its position.

Many scientists attempted to classify clearly the company’s theories in modern economic literature. It is pertinent to single out the studies of E.Popov [8], L.Saakova [9], R.Gibadulin, I.Mardanova [10], who summarized the theoretical approaches and compared them. I. Blank [11] also considers models of the target function of the enterprise through the prism of modern concepts of the theory of the firm. Kleiner carried out a profound and valid criticism of the existing concepts of the theory of the firm in his papers [12, 13].

In general, theories explaining the nature of the firm are usually divided into two groups: fundamental and applied. Fundamental theories in turn are also divided into two groups – institutional and alternative. Applied theories consider separate functional directions of the company’s development (marketing, finance, manufacturing, organization of management and entrepreneurship).

Existing classification allowed distinguishing certain weighty theories from the point of view of formation of the target indicator of the firm’s activity. Herewith for each chosen theory is characteristic of its own vision of essence of the enterprise. The results of the author’s study are given in Table 1.

As can be seen from the data in the table, the target security indicator of the firm is not separately identified in any theory. In fact, in economic theory, issues of security, survival, and profit maximization are considered together. This is justified by the fact that in business there is no profit without risk and there is no point in considering them separately from each other. It is considered that it would be foolish to call someone’s decision “profit-maximizing” if it increases the risk and uncertainty so much that the chances for survival become slim to none. The idea of long-term profit assumes taking into consideration of all risks and losses.

Nevertheless, there is an urgent need to study security as a separate economic category. The evidence to it is the huge number of publications devoted to this topic.

In general, the analysis of economic literature allows us to conclude that, despite a deep empirical study of certain aspects of the theory of the firm, there is a multiplicity of ambiguous approaches in this issue. At the same time, there is an objective need to create a systematic vision of a company development strategy, which develops in conditions of high level of uncertainty and risks of economic activity.

Investigating the essence of the security of a corporation cannot be based only on one of the considered approaches of the firm’s theory and their symbiosis is required. In fact, the development of scientific ideas about the security of a firm can be viewed as an evolutionary superposition of various research directions, partially overlapping, mutually adaptive, having comparative advantages in the field of methodology, but not providing a systematic understanding of this most complex phenomenon.

Table 1. The objective function and the essence of an enterprise in the theories of the firm

An approach	Basic methodology	Purpose of the company	The essence of the firm (enterprise)
1. <i>Traditional (neoclassical) theory</i>	Resource-technological approach, marginalism	Maximizing the profit of a firm	The system of converting the initial resources into final products.
2. <i>Management theory (or managerial theory)</i>	Cognitology	Maximizing sales and income	Incarnation of the firm and management personnel, who makes a decision on behalf of their firm, based on personal benefits (factors of benefit for managers – salary, prestige, market share, stability of the post held).
3. <i>Theory of transaction costs</i>	Neoinstitutionalism	Minimization of transaction costs of the firm.	The system of a complex network of commercial contracts, which is designed to act as the main subject of saving transaction costs.
4. <i>Behavioral theory (or the theory of multiple goals)</i>	Behaviorism, conflictology	Harmonization of interests of the firm and stakeholders.	The collective of individuals with different motives and preferences.
5. <i>Entrepreneurial theory</i>	Cognitology	Organization of the production process (“new connection of resources”) to meet the available needs or needs created with the help of the entrepreneur; achieving the desired level.	Scope of the entrepreneurial initiative and available resources.
6. <i>Evolutionary theory</i>	Evolutionism (biological evolutionary theory)	Sustainable development	Dual object: on the one hand – a member of the business community, which is exposed to all the consequences of the evolution of this society, and on the other hand – the object has its own traditions in determining the directions of activity, the volumes and proportions of the factors of production involved for this.
7. <i>System- Integration theory</i>	System analysis	Ensuring the existence, security and stable development of the enterprise itself.	A relatively stable, integral and environmentally independent socio-economic system that integrates the processes of production (sales) of products and the reproduction of resources; matrix system, including processes and events.

Note: * – data is formed based on materials of author’s research.

In recent years, the system-integration theory of the firm (the founders – J. Kornai [21], G. Kleiner [12]) has received a special development (Table 1). The main aim for the development of this direction is to solve the problem of integrating various approaches in the theory of the firm. Simultaneously they are viewed not as opposing, but as complementary, allowing a multidimensional disclosure of the essence of the theory of the firm and its content within the framework of ensuring the safety of business processes. Therefore, it is advisable to carry out further research into the problem of corporate security precisely from the point of view of the system-integration theory of the firm.

In this regard, as the basis for an integrated approach to assessing the effectiveness of the company, the concept of financial architecture, first proposed in 1999 by S. Myers [1], was developed. The company’s architecture covers three key structures – capital, property and corporate governance. They exert a significant influence on investment risks, forming both unique risks of the company and its susceptibility to systematic (market) risks. The last two characteristics – the ownership structure and corporate governance – predetermine methods for reconciling the interests of various types of owners, the regulation of conflicts of interests between owners and management. Apart from that, the risk of non-payment and increasing costs of financial instability directly depends on the structure of capital [2, p.14].

The application of the concept of financial architecture implies focusing on the “design of the company”, or on the dynamic nature of the processes taking place in the modern company. According to S. Myers [1], the study of the financial organization of the company, the methods used in it for adapting to changing conditions in a competitive environment and in the capital market acquires exceptional importance. Therefore, a special role is assigned to financial architecture as a system design, based on which it is possible to build an adequate balance of financial and intellectual capital. The construction of the financial architecture of the company should correspond to the task of creating value for all its strategic stakeholders (stakeholder value added, STVA) and avoidance of the stakeholder risk leading to the loss of intellectual capital components [2].

CONCLUSION

Understanding the characteristics of the company’s financial architecture is important for the further planning of its operations. One of the elements of such planning, for example, may be forecasting the amount of cross financing between business units of a group of companies. The scheme of organization of financial flows based on cross financing and subsidization takes place in groups of companies with a sufficiently high level of integration of subsidiaries and is typical for groups with a typical financial architecture.

The most important perspective areas for the development of security issues and financial architecture of companies can be directed to the research of companies operating in developed markets, where types of financial architecture are more diverse and interesting from the point of view of strategic effectiveness. Including security into the components of firm's financial architecture will enable to include into consideration such important and rash issues as cybersecurity, protection from raiding, reliability of the counterparty and other issues that somehow affect the financial stability of a company.

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Specific features of ensuring food security in Ukraine

Annotation. The article substantiates that food security is one of the main indicators of socio-economic development of the country. The study suggests that food security is the state of the national economy and the agro-industrial complex in which, regardless of the influence of various internal and external factors, the satisfaction of the population's needs for food consumption with rational consumption norms is guaranteed, and the food independence of the country is ensured. On the basis of the Global Food Security Index, negative trends in the level of food security in Ukraine in 2014-2016 are identified. The most important factors influencing the level of food security in Ukraine are grouped and characterized by author. The main tasks for the formation of a satisfactory level of food security are identified, among which are as follows: the technological modernization of agriculture, food industry and agribusiness production services; the formation of the personnel potential, able to develop and implement innovations; the restoration of agricultural production in abandoned agricultural lands; the creation of modern social infrastructure of rural areas. According to the proposed measures, a conceptual model of the mechanism for ensuring food security in Ukraine was developed.

Key words: agro-food sphere, security, threats, protection, the mechanism for ensuring food security, food products, the level of food security.

Setting of a problem. At the present stage of the development of society, the problem of ensuring food security is becoming increasingly important. Moreover, it is considered one of the key problems of a global nature. Therefore, its solution is an important condition for creating an atmosphere of stability and prosperity both in the world as a whole and in each country in particular. In just the last decade alone, the following changes have occurred in the sphere of food consumption: about 140 million people who are below the poverty line do not have the opportunity to be provided with food products in a volume that corresponds to physiological consumption norms [21].

In Ukraine, in 2016, food consumption, as compared to similar indicators of the late 1980s, declined as follows. Consumption of fish and fish products declined by 3,3 times, consumption of milk and dairy products declined by more than 1,2 times, consumption of meat and meat products, eggs, sugar, fruits and berries declined almost 80%, and finally, consumption of vegetable oil and vegetables declined by 27%. At the same time, consumption of bread, bread products and potatoes has increased. According to various estimates, the daily energy content of the diet of a resident of Ukraine has significantly decreased compared to 1990 from 3420 kcal to 2460-2100 kcal. The same situation is observed in the post-Soviet countries [21, 22].

Radical liberalization of the Ukrainian economy in 1991-1992 and the subsequent dismantling of managerial, financial, credit, price, tax and other systems have led to an aggravation of the old and the emergence of new problems. At the same time, radical reforms accompanied a decline in agro-food production and a reduction in real incomes of the population. As a result, there was a significant disparity in prices for agricultural products and industrial inputs, the problem of food security in Ukraine as a whole, and its regions, in particular, worsened. The described problem is international, in former socialist countries {25, 26, 27}, what's more in China too {28}, mainly on financial path, inherently by bank and credit policy.

The need to develop a food security strategy is the absence of a food security system that has been purposefully created and developed by the subjects of state and local government, economic entities of all spheres and subsystems that ensure food security at the national, regional and local scales.

Awareness of the real state and the need to ensure food security leads to the conclusion that the chaotic and uncontrolled state of subsystems for ensuring food security, which are functionally, organizationally, resourcefully and technologically related, should be replaced by a corresponding system of food security of the country and regions that would include regional and local authorities together with the commodity producers and scientific sphere, financial business and agrarian business entities.

Analysis of recent researches and publications. Despite the fact that the problem of ensuring an adequate level of food security, including the various theoretical aspects of its definition and measurement in the context of globalization challenges, has been sufficiently specified in the scientific works of leading economists, specialists in management theory and practitioners of the agro-food sector, we have to state that some aspects of this problem still remain controversial. This concerns first of all the definition of the essence of the phenomenon of food security, the legislative regulation of food security issues and the diagnosis of the level of food security.

The etymology of the term "food security" makes it possible to determine its introduction into practice in 1974 at the World Food Conference, organized by the Food and Agriculture Organization of the United Nations (FAO), held in Rome after the steep rise in world grain prices. However, the essence of this category was determined in 1996 in the Rome Declaration on World Food Security, where it is noted that food security, at the individual, household, national, regional and global levels is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" [11].

The study of the problem of food security has its origins in the early 20th century. In particular, Kondratiev N., Chay-anov A. and Bukharin N. [15] in the 60s of the 20th century pointed out the relationship between consumption and production of agro-food products [16]. The establishment of optimal proportions between production and consumption was further investigated in the scientific works of Bilous O.H. [19], Vlasov V.I. [19], Yeszhanova Zh.Zh. [15] and Zerkalov D.V. [15]. A significant contribution to solving the problem of ensuring food security was made by such famous Ukrainian and foreign scientists as: Pruntseva H.Đ. [18], Sabluk P.T. [19], Sidnieva Zh.K. [20], Tarakhov P.V. [21], Tryn'ko R.Đ. [22], Uskova T.V. [23], Tsarenko O.Đ. [24], Shcherban' V.M. [24] and many others.

Currently, the area of ensuring food security is still one of the main directions of the state's economic policy, as well as the main condition for social stability and the basis for improving the quality of life of the population.

Goal setting. The purpose of this study is to analyze the concept of food security for the domestic economy, to determine its level and to develop a mechanism for ensuring food security of the country.

Presentation of basic material of the research. In the second half of the 1990s, the term "food security" became widely used both in official documents and in scientific literature. The analysis of sources on the problem under study allows us to state that today there is no clear, scientifically based and normatively fixed idea of this category in Ukraine.

According to the concept of food security proposed by Maxwell and Frankenberd [15], food security is defined as an opportunity to purchase food products, necessary to maintain a healthy and active life, at any time. Additionally, the arbitrary use of the term "food security", as was the case in the draft of a "National Program for the Development of Agro-Industrial Production and the Social Revival of the Village of Ukraine for 1999-2010 threatens that all other resources will be directed to "raising agriculture", the supply of which will be provided by demand from the broad sections of the population [5]. The proposed strategy of agrarian policy in Ukraine, the essence of which is reduced to the food security of the country, is aimed primarily at achieving food self-sufficiency in the minimum necessary amount of food and reviving the viability of the country's agricultural sector and the core principles of its functioning.

An important element of the state regulation of food security and the national economy as a whole is the formation of the state food reserve. The regulatory legal basis framework for the formation of the food reserve in Ukraine includes the Law of Ukraine "About the State Budget of Ukraine" [10], the Law of Ukraine "About State Support of Agriculture of Ukraine" [2], the Law of Ukraine "About the State Order for Satisfaction of Priority State Needs" [1], the Law of Ukraine "On the Fundamentals of the State Agrarian Policy for the Period until 2015" [3], the Law of Ukraine "On the State Material Reserve" [9], the Decree of the President of Ukraine "On the Approval of the Statute on

the State Agency of the Reserve of Ukraine" [4], the Order of the Minister of Agrarian Policy of Ukraine "On the Implementation of Financial Interventions by the Agrarian Fund" [7].

The Decree of the Verkhovna Rada of Ukraine "On the adoption of the Draft Law of Ukraine on Food Security of Ukraine" emphasizes that the critical situation with food supply of the population is one of the threats to national interests and national security as a whole [8].

The general essence of food security of Ukraine is adequately reflected in the existing normative and legislative acts, which are based on international approaches taking into account national economic opportunities. According to the Decree of the Verkhovna Rada of Ukraine "On the adoption of the Draft Law of Ukraine on Food Security of Ukraine as a basis", food security should be interpreted as the protection of the vital interests of man and citizen, society and the state, which not only guarantees physical and economic availability to the population of the quality vital food products, but also supports the stability of food provision and provides food independence of the country.

This important concept is very well complemented by scholars of agricultural economics, who believe that "the key characteristics of food security are related to the accessibility, stability and sustainability of access to food products, which largely depend not only on the growth of agricultural production, but also on trade policy, the development of trade ties in the agrarian products markets, that are able to strengthen these characteristics to a certain positive level" [8].

Tryn'ko R.Đ. argues that "food security is an important and special component of the national security; therefore, it should be viewed not only as an internal component of the state's independence, but also as an important external factor, since the provision of food for the population at the level of rational consumption norms testifies to the economic strength of the state" [22]. This means that food security in the hierarchy of various types of security should take a special place, since normal and full-fledged food products do not have alternative substitutes.

The idea of treating food security taking into account some economic and environmental positions deserves appropriate attention.

According to the researchers, "the formation of a national food security strategy is related to the economic responsibility for the quality of food and environment of all links of agro-industrial production" [24]. It is characteristic that the formation of food security, taking into account the ecological component of domestic agricultural production, is to a certain extent complicated by the lack of an effective quality control system, in particular the presence of especially hazardous substances such as dioxin, causative agents of mad cow disease, heavy metals, etc. In such a situation, an increase in the level of consumption of agro based and processed food products can definitely create threats to life, or lead to a decrease in the level of health of the population [19].

So, based on the analysis of the existing theoretical provisions on the definition of "food security", we can conclude that the main distinguishing features of ensuring food security of the country include the following ones:

- the need for physical and economic access of the population of the country to basic food products in the amount necessary for an active healthy lifestyle;
- provision of a set of legal, socio-political, economic, scientific, technical, organizational, information and other measures aimed at ensuring the population's access to food items;
- the ability of the national food system to minimize the impact of seasonal, weather and other fluctuations in food supplies of the population of all regions of the country.

Consequently, it is proposed to understand food security as a state of the national economy and the agro-industrial complex, in which, regardless of the influence of various internal and external factors, the satisfaction of the population's needs for food consumption with rational consumption norms is guaranteed, and the food independence of the country is ensured. In modern conditions, the issue of the level of food security is becoming more urgent. In the context of Ukraine's integration into the world economic community and further transformation of the national economy, the problem of ensuring food security is of paramount importance.

Globalization makes new demands on providing the population with quality food products. Moreover, the national security of the country is largely determined by the level of food security. This problem is quite complex and multifaceted; it directly concerns the interests of each person and the interests of the state as a whole. To this end, "The Economist Intelligence Unit", which is the research and analysis division of The Economist Group, has published the results of the Global Food Security Index ranks. In 2014-2016, the study of the global food security rankings covered 109 countries, which were evaluated in three main categories:

- level of food availability and consumption;
- availability and sufficiency of food products;
- level of quality and security of food products [13].

Each of these criteria includes 28 different indicators, the values of which are measured over a two-year period. The calculation used data from international organizations and national institutions. The high position of any country in the rating means that its food security is at a high level.

The index measures the achievements of each country on a scale from 0 (the lowest degree of stability) to 100 (the highest degree of stability) on the basis of the data obtained in the three above-mentioned basic categories (See Figure 1).

The United States of America became the world leader in the level of food security, and took the first position in the previous rating of 2014. The main advantages of the United States, according to the compilers of the rating, are related to the economic stability of this country, as well as the high level

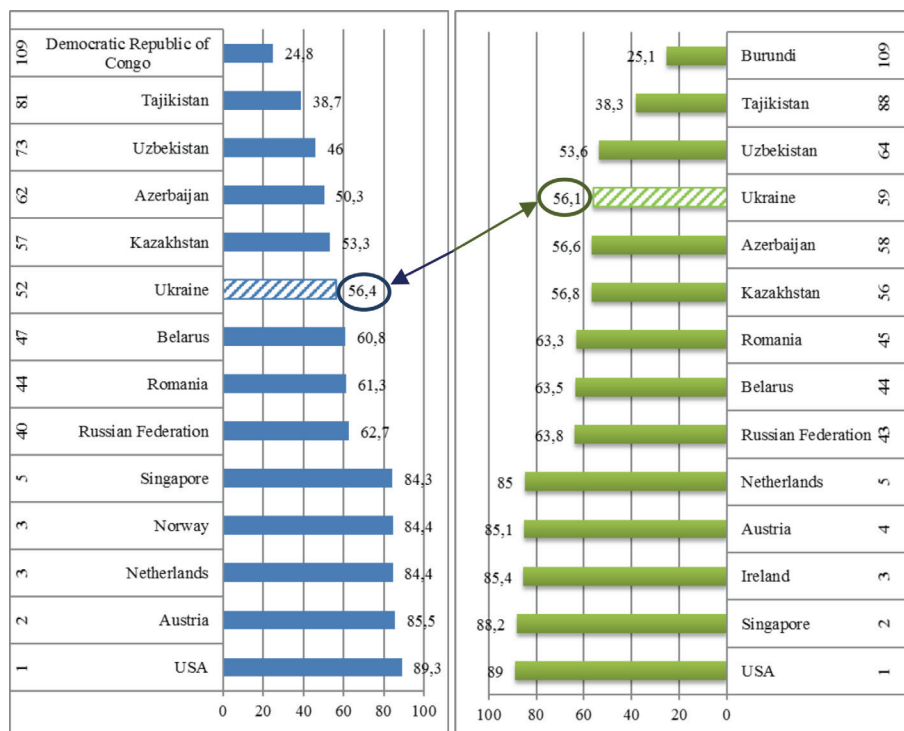


Fig. 1. The Global Food Security Index in 2014 and 2016 [developed by author on the basis of the sources: 12, 13, 17]

of incomes of its population combined with the relatively low share of household expenditure on food, the developed agricultural and logistical infrastructure, the high diversification of nutrition and the comprehensive access of people to safe and nutritious products. The top ten leaders in terms of food security also included: Singapore, Ireland, Austria, the Netherlands, Switzerland, Canada, Australia, France and Norway [13].

Ukraine ranks 59 out of 109 in the ranking – between Azerbaijan and Ecuador. Over the past two years, this indicator has deteriorated by 8 points. According to experts' opinion, about 9% of the population of Ukraine does not receive enough nutritious food, necessary for active and healthy lifestyle.

Food security for Ukraine is one of the central problems in the national security system, since without reliable food supply it is not even possible to avoid dependence on other countries.

The following factors influence the food security situation in Ukraine:

- level of development and sustainability of agricultural production;
- income and quality of nutrition of population;
- availability of food products of domestic production;
- the import scales;
- openness of food markets, mechanism of counteraction of import intervention;
- volumes of food stocks;
- production potential of agriculture;
- quality of agricultural products and food products;
- conformity of food security requirements to the legal legislation, as well as to the existing system of normative acts and the priority directions of the agrarian policy of the state;
- threats to food security.

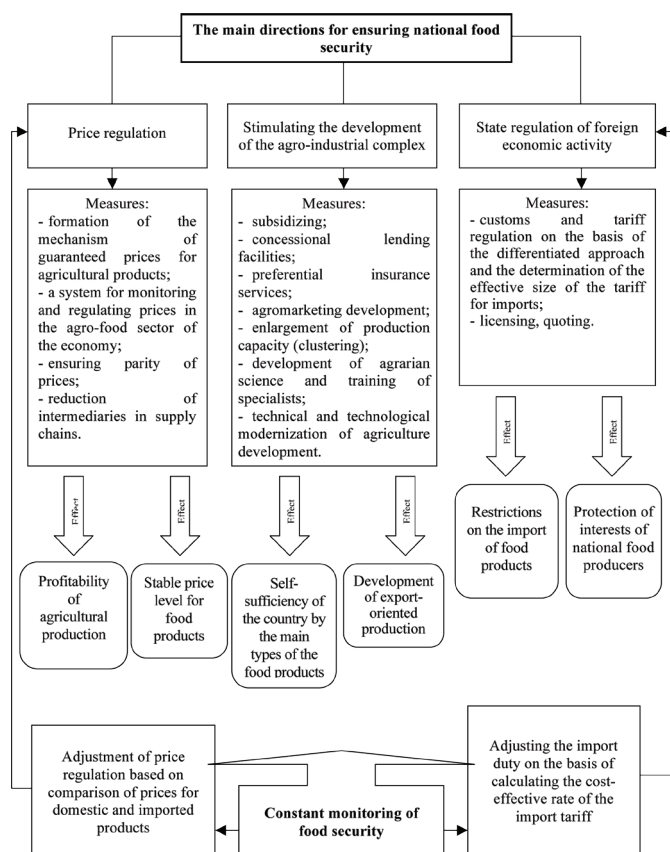


Fig. 2. The conceptual model of the mechanism for ensuring food security in Ukraine [developed by author on the basis of the source: 15]

That is, to approach the level of the developed countries, it is necessary to solve simultaneously several interrelated and capital-intensive tasks, which are the next ones:

- the technological modernization of agriculture, food industry and agribusiness production services;
- the formation of the personnel potential, able to develop and implement innovations;
- the restoration of agricultural production in abandoned agricultural lands, including an increase in crops;
- the creation of modern social infrastructure of rural areas (housing, roads, etc.), transition to rural development policy. To this end, it is necessary to constantly monitor price parity between the agricultural sector and other sectors of the economy, to use indicative prices for the timely adoption of measures to ensure the profitability of the production of meat, milk, grain, sugar and other vital food products [15].

According to the proposed measures, a conceptual model of the mechanism for ensuring food security in Ukraine was developed (See Figure 2).

Proceeding from the above-stated considerations, food security of the country largely depends on the agro-food sector, which, with preservation and improvement of the habitat environment, regardless of external and internal conditions, allows the population of the country to continuously receive environmentally friendly and healthy food at affordable prices, in volumes not lower than the level of rational consumption norms.

The most important conditions for achieving food security in Ukraine are the following ones:

- potential physical accessibility of food for each person;
- economic opportunity to purchase food for all social groups, including the poor, which is achieved by raising the standard of living or by taking the necessary social protection measures;
- consumption of high-quality food products in quantities sufficient for a balanced diet;
- creation of stable economic conditions for the development of the national food market;
- conducting of an effective agro-food policy;
- ensuring equal opportunities for all business entities;
- conducting of a reasonable national policy in the field of employment;
- implementation of social policy, aimed at eradicating poverty and social inequality in access to adequate food, as well as its use;
- achieving sustainable, intensive and diverse food production, as well as increasing productivity and efficiency in agriculture;
- implementation of integrated strategies for the development of the agro-industrial sector with a view to increasing local food production opportunities;
- assistance in the introduction of advanced technologies in the production, processing, storage and sale of raw materials and foodstuffs;
- taking advantage of the international division of labour;
- active foreign economic activity and optimization of export-import activities;
- investment in the agrarian sector.

Conclusions. The country's food security is ensured by a combination of economic and social conditions related both to the development of the domestic agriculture and the agro-food complex, and to the general state of the national and world economy. Consequently, the use of legislatively approved methods of price regulation in the agro-food market, as well as the implementation of the proposed measures for the sustainable development of the agro-food sector of the economy and the reform of the customs policy on the regulation of import foreign trade operations will enable Ukraine not only to strengthen its economic sovereignty, but also to pursue an independent economic policy in the context of globalization, and to determine the possibility of achieving full food security of the country.

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Lean governance and utility price-cutting policy

I. INTRODUCTION

The financial and economic crisis and the experiences gained during its management confirmed the paradigm, that the state should take advantage to fulfill roles of value creating and protecting in political, economic and social areas to put the abstract system of norms of commonwealth into practice.¹ The attention is called to the fact that we should recognize the need to set up a system of disciplinary interrelationships in economics to offset the challenges posed by the globalized world economy and by economic management, and this requires a new approach and practices in Hungary.² This does not mean a separation from the society, it is quite the opposite: through the autonomy the state is working towards economic and social development on a mandate secured by wide social integration, cooperation with various representatives and organized groups of stakeholders – inter alia the National Consultation serves this purpose.

II. THE NATIONAL CONSULTATION AS A NEW INSTRUMENT TO REPRESENT COLLECTIVE VALUES

Decision-makers should always be aware of the effects of their decisions, measures, even non-acting not just on the whole community, society but on every single citizen as well. They should operate a decision-making system which – beside analyzing rationality of various economic or other professional aspects – is taking the chances of affected individuals into account, therefore the decisions do not become impersonal.³ Contrary to schools of New Public Management became popular in the past the concept of Collective Values offers the opportunity to think about the objectives and performance of policy making in a useful way. At the same time it makes the performance and efficiency of all activities measurable which are carried out directly or funded by the state serving community goals (also including services funded by the state but actually managed by private enterprises or non-profit organizations).⁴ Collective Values have indicators with a much broader horizon than ever used by public management theories (including the latest additions in the newest public management concepts), because it is also tracking the changes of public trust and legitimation beside performance evaluation.⁵ Additionally, it is also raising the issues of fairness, morality and transparency. The currently applied New Public Management theories in our country mostly do not address or do not give the necessary emphasis to these components and their economic and social consequences.⁶ We can make a mistake, if we want to evaluate the quality of public governance, the whole system or just a slice, a project of public services solely based on traditional financial indicators: this way we would only support areas which do not produce real value, and vice versa, we

would not secure funding for areas, which could create value.⁷ Previously, to identify public interest New Public Management theories used the aggregation of individual preferences represented as a collective need.⁸ Many of us clearly remember of the bluff called „system change towards social welfare”, which is constructed the same way. However, this method mirrored the real perception of the society significantly distorted or manipulated therefore a much more sophisticated method was needed, which identifies individual and collective preferences as a result of collective consideration and referendum. This is a unique feature of the concept of Collective Values, which is applied in several countries as well.⁹ The clear objective of the National Consultation is that the most important measures planned for the country should be made on direct consultation with the constituents, with the society. The Central Office for Administrative and Electronic Public Services is evaluating the questionnaires used in National Consultation, initially coordinated by the Prime Minister's Office, later by the Cabinet Office of the Prime Minister. Around 920 thousand replies are registered for the questionnaire created for the Constitution in February 2011. More than one million replies were registered for the questionnaire sent out in May 2011 concerning social issues which included questions about elderly people, FX-loan borrowers, public utilities and education supports. Around 700 thousand people completed and sent back the „Economic questionnaire” which were sent out in September 2012 and included questions about taxation, social contributions, large enterprises, public utilities, minimum wage, pensions and FX-loan borrowers. In May 2015, the questionnaire related to terrorism, refugees, migrants and the European Union were completed and sent back by nearly one million people again.¹⁰ Finally, record high number of participants were registered in April 2017, when 1 million and 680 thousand people returned the questionnaire called „Let's stop Brussels!”¹¹

In this case, the clear objective of the National Consultation was to provide information for the government, how many Hungarian people and what extent do they support the position of the government against decision-makers in Brussels in terms of utility price-cutting policy and integration of the migrants. Of course, Hungarian people are aware the most of the Hungarian interest, that is why it was decisive for Hungary to maximize the participation in the National Consultation initiated by the government.

III. OBJECTIVE OF LEAN GOVERNANCE

Objective of lean governance is, to continuously improve productivity and efficiency of public governance in course of serving the citizens, to filter and cease elements of service portfolio deemed redundant and inefficient in the process of

service provision¹². At the same time, to continuously increase level of quality and cost-efficiency of services provided for the citizens on the whole. This is far from a simple task in practice, because – for example- to increase number of government windows can obviously reduce average waiting and processing times, and the number of clients per clerk, and this also gives an opportunity to increase level of quality in the administration, but to create new government windows can significantly raise the costs, it can bring down the cost-efficiency. This way, to apply methods of lean governance can actually be a main supporting tool for value-creating and value-adding in practice. On the whole, lean government methods are therefore applied in the right way, when they result in increased capacities of the government, and more services can be provided on a single expenditure unit on the same (or higher) quality level. Another advantage of applying lean governance methods is, that they lead to a better understanding of interconnection of the processes, and consequently, they make the identification of bottlenecks faster and thus they make the implementation of developments more efficient and faster. As a final outcome, they contribute to create a culture which supports continuous development.¹³

To maintain competitiveness and market position certain multinational enterprises are setting cost level bearing in mind that they cannot afford a price increase in terms of their products or services, the only way is to go down.¹⁴ Consequently, several methods applied to increase efficiency and productivity of manufacturing processes (e.g. VSM, Kaizen, 5S, Six Sigma, etc.) can also be utilized in public administration.¹⁵ Professionals call this lean governance. The Hungarian government recognized that all these methods can be applied successfully in case of public utility services either. In terms of lean governance in Hungary the process of utility price-cutting is of utmost importance, thanks to which the cost level of several public services could be successfully reduced and as an effect of the utility price-cutting policy customer arrears against utilities remarkably declined.

Managers of privatized public utilities are trying to keep investments from own sources to the minimum to maximize (short term) profit (e.g. minimizing number of employees and development expenditures) and they offer their services at the highest price possible, which is usually achieved through increasing service charges or in another cases, reducing scope of services, level of quality, range of clients or through using all these methods combined. From this point onwards the real value of services for the given community, to increase quality of life of citizens would become totally irrelevant.¹⁶ However, the European Union would still consider privatization, commercialization and energy union the only ways to improve public services.

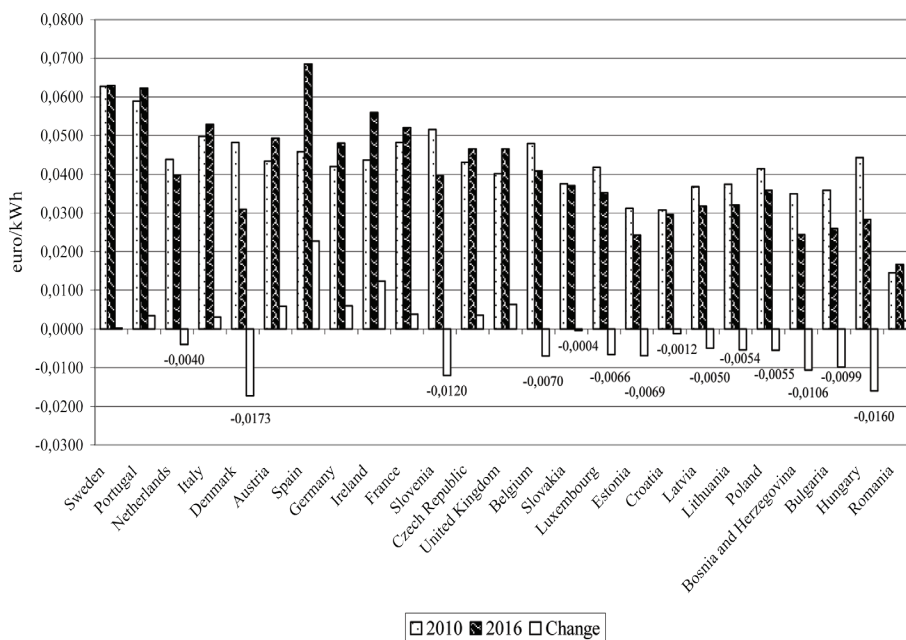


Figure 1: Gas prices for domestic consumers
Source of data: EUROSTAT

Therefore it was time to give room and opportunity for other type of solutions – otherwise well known both inland and abroad and applied successfully in many locations – primarily to regulate non-profit services, price and quality much more strictly than before.¹⁷ The main objectives should be to accumulate residential savings and limit the profit of public service providers. In this spirit, the Hungarian Government intends to implement long term reforms which aim to maintain state-provided non-profit public services in the areas of drinking and waste water, gas, electricity, district heating, waste management and public catering.

IV. OBJECTIVE AND RATIONALE OF UTILITY PRICE-CUTTING POLICY

By analogy with corporate finance, household finance asks how households use financial instruments to attain their objectives. Household financial problems have many special features that give the field its character.¹⁸ Shortly prior to the recent financial crisis, U.S. households tended to invest more in stocks and less in homes and to have larger mortgages than Europeans of similar characteristics.¹⁹ In the Hungarian population households must spend on average 81% of their income on everyday expenditures, mostly (32%) on overheads (utility services) and food-stuff (31%). According to one of the oldest economic theorem, the Engel's law, higher income entails a relatively lower rate of food expenditures. Therefore VAT cuts of basic food items are especially important for population on income below average. Beside providing a yearly saving of several ten thousand forint it secures the daily existence for the vast majority of the population.

Structural analysis of household consumption also reveals that overhead costs amounted to quarter of total expenditures according to a survey from 2005, the rate increased to third however by 2012. Overhead costs rose drastically within households expenditures in the eight year period before 2012. Over

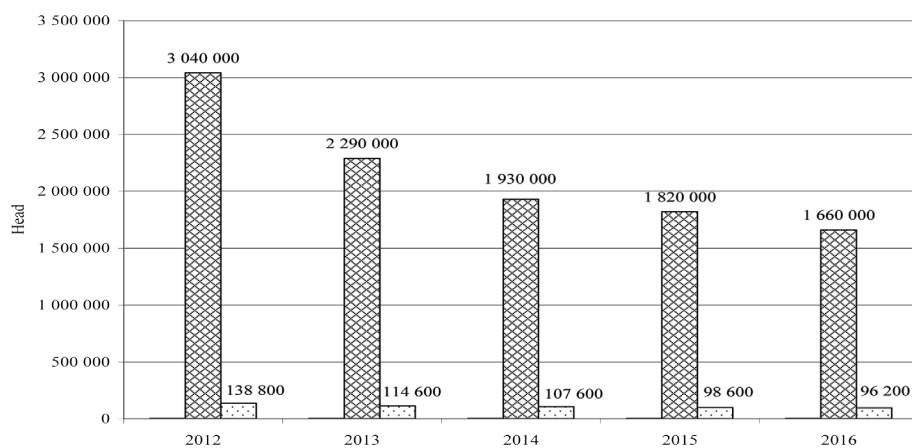


Figure 2: Number of households generating new arrears fell and number of consumers switched off dropped between 2012 and 2016

Source of data: HORVÁTH Zoltán (2016): *A rezsisökkentés eredményei. Nemzeti Fejlesztési Minisztérium. VDSZ konferencia. Budapest, 2016. december 1.*

the 8 year period of regimes before 2010 certain public utilities were allowed to raise prices 15 times. As a result of this residential energy tariffs increased more than the average price level. Price of pipeline gas increased the most.

For example, gas price increased significantly in Hungary in 2007 when global prices dropped. As a result, gas price in our country were one of the highest in Europe by 2010. Therefore, the new government formed in 2010 started to implement the utility price-cutting policy. Main objective of this program was to achieve a price level for utility services which is affordable for the families. Hungarian families should have access to energy at the lowest price in European comparison. Of course a minimum profit should be secured for the utilities as well, to have a certain margin to maintain service security and to improve service quality, but not in the excessive, uncontrolled way, like they want to do.

The first phase of the utility price-cutting commenced on 1st January 2013 in Hungary. At this moment, there was a 10 percent cut in the price of gas, electricity and district heating, and this measure was followed by further suggestions and measures in terms of residential bottle gas, waste management, drinking, wastewater and chimney-sweeping services.

A law for utility price-cutting was enacted on 29th April by the Parliament.²⁰ As a result of the implemented utility price-cutting measures price of natural gas was cut 25,19%, price of electricity was cut 24,55% and price of district heating was cut 22,63% overall in three steps in 2013 and 2014. There was a 10% cut in the prices of drinking and waste water services, bottle gas, waste management and chimney-sweeping services respectively.

In terms of natural gas prices our country was ranked 17th in Europe so far in first half of 2010 according to EUROSTAT data, but in 2016 we recorded the second lowest natural gas prices, and measured from 2010 Hungary was second after Denmark in the extent of gas price reduction. In terms of residential electricity tariffs our country was ranked 16th as yet in 2010, but in 2016 it was the third cheapest.

Thanks to the utility price-cutting the residents in our country were able to save 642 billion HUF between 1st January

2013 and 31st December 2015. Consumers saved the most (278 billion HUF) on the electricity bills, in case of natural gas residential consumer savings totaled 240 billion HUF. At present, the yearly saving sum of the population is 268 billion HUF altogether.

Based on data from Hungarian Energy and Public Utility Regulatory Authority, a yearly saving sum of a married pensioner couple ranges between 83-116 thousand HUF, while the sum of a family with two kids ranges between 109-112 thousand HUF.

In our country overheads, rent, mortgage payments arrears are most common housing related problems. According to a

research conducted in Europe 26% of the population or 2,6 million households have payment arrears. Occurrence of this is much more higher in case of public utilities (2,3 million people) than in case of rent or mortgage (680 thousand people). 63% of people living under the poverty threshold did have some kind of arrears, which meant the worst ranking in the EU in 2013.²¹

Overhead cost-cutting also had a favorable effect on the trend of arrears accumulated in the past. In case of natural gas, electricity and district heating total sum of account arrears dropped 48% between 2012 and 2016. At the same time both the number of households generating new arrears and consumers switched off significantly decreased in recent years. Between 2012 and 2016 number of households generating new arrears fell 45% and number of consumers switched off dropped 31%.

V. PRICE FREEZE VERSUS PRICE CAP REGULATION

This is not the first instance that other countries take over initiatives which was first implemented in Europe by the government led by Viktor Orbán. Total privatization of the energy and utility sector and thus steeply increasing energy price is not a unique phenomenon in Europe, but it seemed that more powerful countries of the continent managed to control these service providers so far. However, the British Labor Party was campaigning with cutting energy prices in the 2015 general election in the United Kingdom. In the 2015 British election campaign the leader of the British Labor Party promised to voters to freeze overhead costs for residents and family-owned enterprises for 20 months, if forming a government. In the opinion of Ed Miliband energy firms are billing more than justified for long, and they are able to do that, because there is no adequate level of competition on the market. In an open letter the politician urged energy firms to support to achieve his plan.²² However, energy providers reacted furiously to the idea: in their mind such a decision could even entail power-cuts.

According to British consumer protection organizations more and more pensioners and families on low income are unable to pay utility bills. In the 2016 report the CMA stated, that

in the United Kingdom 90 percent of domestic energy consumers switched off are unable or not willing to change energy provider²³. This means that market mechanisms do not operate properly at all, and they are not providing the necessary control over service providers committing abuse of their dominant market position, and they are not providing high level enforcement of consumer interest. Therefore beside the Labor Party – not accidentally – also the Conservatives did promise to British voters to freeze household energy costs if securing majority in the general election in June 2017. The Conservative Party – if winning in June election – promised to intervene into the price calculation of gas and electricity and would restrict the opportunity to raise prices for two thirds of British households. Nevertheless, policy-making of the right-sided Conservatives somewhat differed from the Labor Party, as they did not promise to freeze prices but to introduce a new price cap regulation for the voters. In their opinion their concept is able to react much more flexible to changes in market conditions. According to certain group of analysts this solution would cut the profit 332 million pounds and cut the annual salary of the CEO 4,2 million pounds in case of one of the largest energy providers. In 2016 Centrica made a record profit before tax in the excess of 2,2 billion pounds.²⁴

Another interesting development in this case that six large British energy providers took on a price freeze of standard gas and electricity until a minimum of a six month period until April 2017, reacting to the scandal regarding Scottish and Southern Energy (SSE). Through the above they offered a 100 pound saving and one of the lowest price on the market to consumers. The announcement of SSE which has 8 million consumers surprised the other energy providers, who – before the winter- much more expected a further rise in prices. The initiative of SSE was not followed by any other actions until present, most of them did not even react to this peace of news, while others like the British Gas and Npower and the French EDF sent only a message through their spokesmen, that they are continuously reviewing their prices. Journalists ended their report in a comic fashion, that they will inform the public on any development in the topic, but from November 2016 not a single announcement was made from any other energy providers.²⁵

There was a 10 percent cut in Czech Republic as well, and smaller reductions occurred in Bulgaria and Germany either²⁶. Despite all these however, apart from Hungary an increasing trend of gas and electricity prices still remained in the European Union.

VI. CONCLUSION – THE EUROPEAN COMMISSION BELIEVES SOLELY IN MARKET PRINCIPLES

The SZÁZADVÉG research institute conducted a public opinion research by phone using a questionnaire, in the course of which 1000 randomly chosen individuals were interviewed between 26th-30th April in 2013.²⁷ According to research results a significant majority of the Hungarian population have already heard the criticism towards utility price-cutting measures. Overwhelming majority of the population (59%) who have already heard of the opponent parties' critics of utility price-cut-

ting do not feel these justified. Based on this research it also can be stated, that after the ongoing criticism overwhelming majority of the population (82%) still supports utility price-cutting to the same extent or even more than before. A little more than one out of ten (11%) supports such measures to a lesser extent as an effect of criticism.

On aggregate, the public opinion research conducted by SZÁZADVÉG in April 2013 confirmed, that a decisive majority of the population do not feel the criticism towards utility price-cutting justified. Public support of the measures is still high.

Against the spirit of founders establishing the European Union the European Commission intends to decide more and more questions on supranational level. Bureaucrats of Brussels want to take the chance from nation-states away to be able to decide independently way on how to control public utilities.

This issue has been granted a part in the consultation, because the European Commission put a proposal named Energy Union to the table, which would remove the right to determine price of electricity from nation-states.²⁸ Pursuant to the proposal member states should create a roadmap „to dissolve all regulated cost element”- This would practically mean the end of utility price-cutting policy, and additionally, large enterprises would have a free hand again to determination overhead costs. Instead of Hungarian families this concept would favor the multinational enterprises again, therefore the government is definitely against it.

Despite the facts the European Commission seems to be willing to believe only in market principles and does not want to consider other alternative solution. To support private stakeholder enterprises in the industry the European Union opened an attack against the process of the Hungarian utility price-cutting policy, for the preparation of which other member states became under similar investigation either.²⁹ Practically, the verdict has already been issued: at the start of the investigation inspected states stepped up with abuse of their power and have compromised sustainability of operation of private utility enterprises. Until present the EU has not launched a single infringement procedure against any private energy provider or utility in case of abusing of power or even harming consumers through overbilling or charging for unnecessary, wasteful expenses.

In a written statement the European Commission argues that market liberalization entails lower prices. On the contrary, own previous reports of European Commission clearly reveal, that residential electricity prices increased 20% on average between 2010 and 2015 in EU member states (50% in the UK, 37% in Portugal). In case of residential gas prices the picture is even worse: in the 5 year period consumer prices increased 25% on average in the European Union (72% in Spain for example). Meanwhile, in Hungary overhead costs decreased the most in European comparison.³⁰

According to domestic experts representing the position of the European Union the centrally coordinated utility price-cutting is less successful than market coordination proposed by the Union. In their opinion, compared to Czech Republic and Slovenia – where the residential market is fully liberalized – Hun-

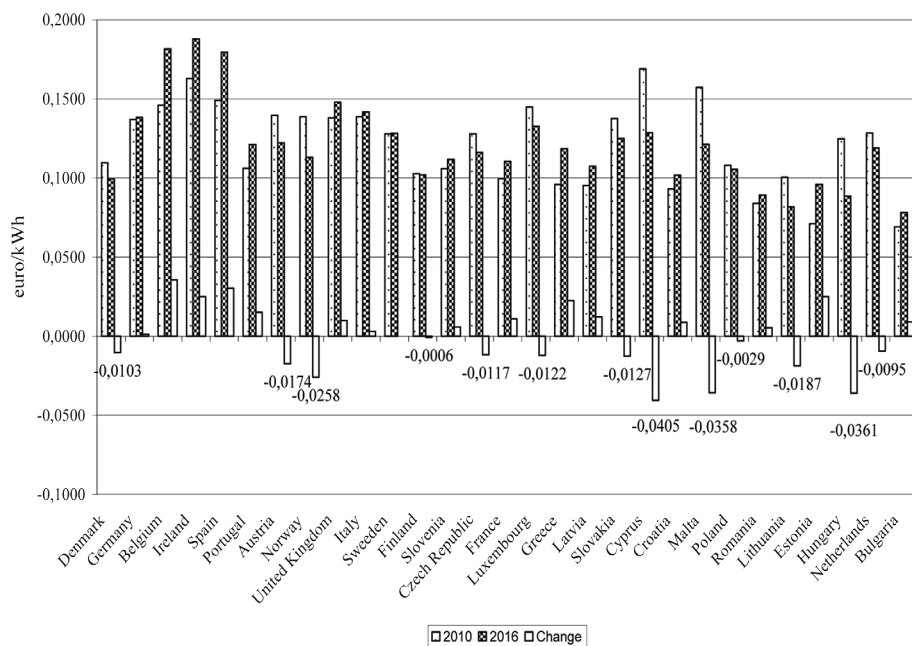


Figure 3: Electricity prices for domestic consumers
Source of data: EUROSTAT

garian prices decreased in fact significantly less, and nominally there are only slightly lower than in countries, where prices are fully liberalized.³¹

On the contrary the truth is, that at present energy prices are globally the highest in the European Union especially in countries with a fully liberalized market, and in recent years prices increased the most in these very countries, for example more than 50 percent in the United Kingdom.

In terms of price niveau Slovenia was ranked 13th lowest in 2010, but it dropped back to 17th until 2016. Price of electricity used in Czech Republic were higher than in 16 countries in 2016. All above clearly justifies, that market liberalization is not a solution to reduce prices at all, and it's not even efficient to apply the necessary control either.

According to Kaja Kallas – Estonian member of the European Parliament – they have already had experiences with the system proposed by the EU, which resulted in decreasing overhead costs in her opinion. Undoubtedly, Estonian electricity prices were third lowest in 2016 in European comparison. But in 2010 there were yet second lowest. Thus their position in fact has not improved, but worsened as opposed to Hungary, whose position improved in turn significantly. Between 2010 and 2016 the largest drop in prices could be witnessed in Cyprus, Hungary and Malta.

In most cases utility price-cutting is made at the expense of the extra profit or service providers, therefore they fight against it using every weapon also involving leading politicians of the European Union, leaders of certain institutes, professionals and journalists willing to serve their interests both inland and abroad. On lobbyist pressure of utilities bureaucrats of the European Union have prepared a total offense. They want to introduce a uniform EU regulation, which would eliminate any price regulation, price limitation opportunities for member states. Hence, for the sake of indefinite profit generation utilities would even be allowed to increase prices of gas, electricity

and other utilities on multiple occasions in a year at the expense of consumers. We could get into the situation, where we got in the era of governments before 2010, namely, overhead costs would drastically increase, after paying utility bills we could make less savings or could spend less to improve quality of life, to renew our knowledge, on healthier lifestyle, recreation, relaxing, to spend free time with more content.

Likely, not every member state could be able to do what Hungary did, namely, to reduce energy prices for residents, then for the industry, finally for the whole economy with help of state regulation. We obviously do not want however, to remove the instrument from ourselves, which led to significant results. Therefore, Hungary should step up the most determinedly for current position

and for the process of utility price-cutting and should not surrender of instruments to regulate energy prices by the state. When a unified energy market is eventually established, which would entail price reduction for consumers, then it should be attractive for Hungary as well to create such an economic environment. Until then however, the European Commission should finally prove to the citizens, that it is able to serve their interests as opposed to the profit interest of a tight lobby group. In the future it should step up against private energy providers and utilities, which abuse of power, harming consumers through overbilling or charging for unnecessary, wasteful expenses. With the support of the European Union they commit consumer abuse to realize extra profit.

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Significance and possibilities of measuring intellectual capital based on accounting statements

ABSTRACT

Intellectual capital is the difference between the market and book value of companies, the measurement possibilities of which have been dealt with by many; however, no unified standpoint has emerged so far. Currently, its value does not appear in the accounting statements because the book value presented at enterprises is tangible, and the value of intellectual capital is difficult to quantify. In our paper, we present the significance and possibilities of measuring intellectual capital through the example of two companies, using Baruch Lev's intangible capital calculation.

INTRODUCTION

In our time, it is becoming more widely known that knowledge and information are among the highest values (Amrik et al., 2018). Since the ultimate financial purpose of businesses is to create value, assessment of the value of companies becoming more and more important in business life, together with the factors which constitute and promote the creation of added value. However, it may be a question whether tangible assets of companies are decisive regarding value creation, or elements like intangible assets should be sought.

It can be observed that the market and book value of companies are different, and the gap between them is steadily growing. It is assumed that there must be a capital that allows this difference is considering this. In the literature, this value has been referred to as intellectual capital, which is the most considerable portion of corporate value at more and more companies. The importance of the intellectual capital is may be surprising at first sight, but considering the rapid changes in our world, it is not that shocking at all. Our world changes fast, and under current circumstances, only companies that can keep up with changes and development can remain prosperous and gain a lasting competitive advantage. It is becoming increasingly important for companies to respond to changes in time and to be able to adapt to the increasing competition. This adaptation can only be achieved if they possess sufficient information about their environment and their internal activities and if they improve their organizational knowledge through the transformation of this data into knowledge. It can be said that intellectual capital has contributed significantly to the successes – and at the same time the failures – of the past decades taking the above into account. Recently the role of the intellectual capital is becoming very important inside small and medium enterprises, the main reason is that of their influence in the formulation and implementation of strategies in these enterprises (Rexhepi et al., 2013). We seek answers to the fol-

lowing questions through the concept of intellectual capital, covering the possibilities of its measurement:

- *What do we mean by intellectual capital?*
- *To what extent is it measurable and tangible?*
- *When a company is evaluated, and its assets are taken into account, where does this highly valuable corporate value appear or does it appear at all?*

The question arises: what sort of value do intangible goods represent to enterprises besides tangible goods due to market competition and the development of corporate environment? What value do human knowledge, corporate culture, skills, and abilities represent? These factors are indispensable for the efficient operation of the company.

DEFINITION OF INTELLECTUAL CAPITAL

Assets that are not classifiable as any category of tangibles and contribute to increasing the value of a company are called intangibles. As synonyms of these assets, we may also find the term of intellectual capital (Juhász, 2004). Under intellectual capital, Wiederhold (2014) means intangible factors that are involved in the creation of value, which is practically convertible into value. Currently, the majority of products originates from intangible assets, and only a smaller proportion is derivable from tangible assets. If such products are sold in large quantities, high income is accompanied by low production costs. Additional value beyond the cost of production is the result of people and their knowledge, using which added value is created (Wiederhold, 2014). According to Jónás et al. (2011), intellectual capital as an available resource should be observed from the aspect of the organization of the company; that is, not the measured data are the most important, but the perceived values that are associated to each measured value by the organization. According to Al-Ali (2003), intellectual capital means intangible resources and assets, which are utilized for value creation by organizations through their conversion to new services, products, and processes. In business, intangible assets and tangible resources have always been recorded when they produced value for the company. However, earlier these elements accounted for a smaller share of the total resources of the company, but in the information and knowledge-based economy, this proportion is steadily increasing, and currently, intangible assets represent the majority. Examining the market capitalization of companies, it is perceptible that companies have a higher market value than book value, which is not a new phenomenon, but there are more substantial differences within the knowledge-based economy (Betbulls, 2015). Book value usually shows the value of the tangible and

capital assets of the company. Sometimes, some intangibles appear amongst the intangible assets, but this does not exactly reflect the real value of intangibles of the company. Market value shows the hidden value recognized by the market; such as reputation, the innovative ability of the company, knowledge of employees, but even the added value of corporate culture (Al-Ali, 2003).

The difference between market value and book value is attributed to intellectual capital, which might possess very serious value for businesses. Intellectual capital is often identified with intellectual property rights by many, which is a misguided approach because it does not cover every intangible asset. Intellectual property is a part of the intellectual capital that can be owned, such as a patent or a trademark (Wiederhold, 2014). One of the features of intellectual capital is that it can be recorded in such cases as patents, but at the same time, it may be flexible as the ability and knowledge of people. Another feature that it can be input and output of a value-creating process at the same time because intellectual capital can be considered as knowledge converted into value or as the final product of knowledge transformation (Dzinkowski, 2000).

ELEMENTS OF INTELLECTUAL CAPITAL

The Skandia measurement system well demonstrates what constitutes the market value of a company and gives us an insight into the elements of intellectual capital. Numerous research has dealt with the examination of intellectual capital (Benevene, 2017; Pedro et al., 2018). Figure 1 shows that market value consists of financial capital and intellectual capital, which can be divided into two main parts: human capital and structural capital. The value of structural capital is attributed to customer capital and organizational capital (Edvinsson, 1997). The three main elements are human capital, which holds together the knowledge and abilities of employees; customer capital, which represents the network of customers, suppliers, and distributors; and organizational capital, which includes organizational structure, culture, and processes (Al-Ali, 2003).

It can be said about human capital – contrary to organizational and contact capital – that technical literature is mostly in agreement with its concept and it is a category of capital. Researchers classify human knowledge, expertise, know-how category of knowledge, abilities, and skills into human capital (Klausz, 2006).

The increased significance of human capital has become apparent over the recent period, and it can be observed that the proportion of employees carrying out intellectual work is much higher than that of employees doing physical labor in the scope of actual production. This is also borne out by the fact that while in 1995 the share of employees in the service sector did not reach 30%, ten years later it rose above 60% (Keeley, 2007).

Structural capital is interpreted differently by some authors. In the approach of Stewart, Edvinsson and Malone structural capital is interpreted only at the organizational level. In the classification shown in Figure 1, customer capital and organizational capital are jointly treated as structural capital (Tóth,

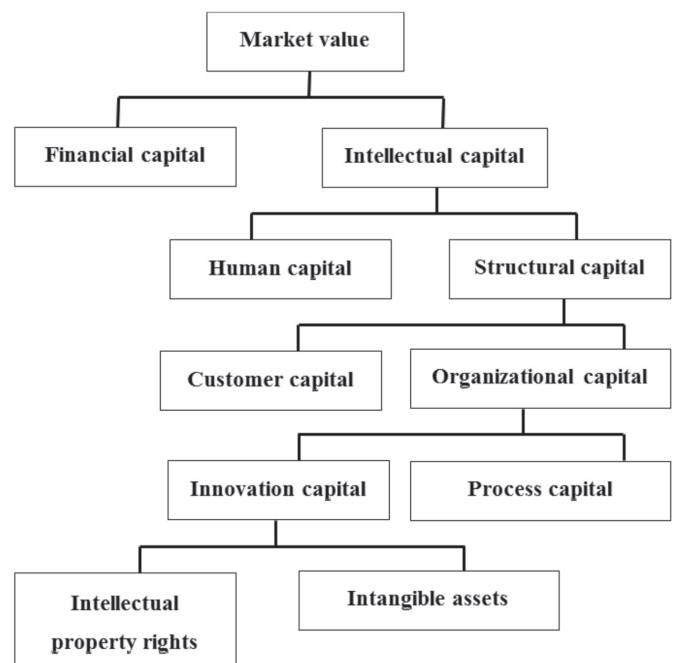


Figure 1: Capital structure of companies

Source: Edvinsson, 1997

2010). Contrary to human capital, structural capital may be retained even if the workforce changes. The value of customer capital or network capital indicates the value of the relationship with clients. The customer base includes information acquired about customers by the organization, such as the expectations of customers towards each service or product. Not only customers are important; the relationship with suppliers and distributors also affects the level of customer capital (Wall et al., 2004). According to Mohácsi (2016), networking capital – although created by members of the organization – is long-lasting and becomes independent from actual persons. Organizational capital is a value that remains with the company even after the employees went home. This includes patents, intellectual property rights, routine procedures that form the capital part of the process, which is characteristic of the company and contributes to better performance. This includes the added value of software, databases, information technology systems, and corporate culture (Boda, 2005; Wall et al., 2004).

MEASUREMENT POSSIBILITIES OF INTELLECTUAL CAPITAL

By measuring intellectual capital, it is possible to take into account how added value is generated during the production of products and to come to know the value of intangible assets (Wiederhold, 2014). Measurement and management of intellectual capital is an increasingly important part within the long-term successfulness of the company (van den Berg, 2003). Traditional corporate valuation methods build upon revenue and cash flows, forgetting about the decisive role of intellectual capital (Berzkalne – Zelgalve, 2014).

Maximizing corporate value has to be the primary goal of company executives (Berzkalne – Zelgalve, 2014); to achieve this objective, managers and investors need to know corporate intellectual capital as well, which has become a major value-

creating tool of our time. According to *Turner and Jackson-Cox (2002)*, there are three main reasons for measuring intellectual capital. On the one hand, companies invest considerable capital in the development of their employees, including the improvement of their knowledge. On the other hand, knowing the value of intellectual capital might be helpful in managing this, as it helps identify the companies that are consequently growing or decreasing thereby helping investors to see the market better. Third, getting to know the return on intellectual investment. If company management is aware of the long-term prospects of this area, resource allocation may become more efficient (*Juhász, 2004*). Measurement might be important due to the motivation of the company to learn, as this may make certain costs visible and possibilities for value creation may become easier to explore (*Sveiby, 2001*).

The most crucial problem with measuring intellectual capital is that usually we can only rely on indexes that are far from the analysed subject, which might result in the opposed position of the promises of the measurement method developers, the expectations of company managers, and the phenomena actually measured by the system (*Sveiby, 2001*). According to the technical literature, there are shortcomings in the accounting evaluation of intangible assets. Most regulations take into account market valuations only; therefore if the company itself creates knowledge or added value, it is not possible to recognize it. An intangible asset may be displayed on the balance sheet if it can be separated from goodwill if the company can influence the asset itself and the associated cash flows or if its cost is well measurable. However, most of these conditions do not apply to intellectual capital (*Juhász, 2004*). Limitations of financial statements regarding defining the value of the company underline the fact that currently not the manufacture of products and material goods, but the creation of intellectual capital is to be considered the source of economic value (*Berzkalne-Zelgalve, 2014*). The accounting system does not provide enough information to determine the value of such a company that predominantly possesses intangible assets (*van den Berg, 2003*). A particular way of measuring the intellectual capital is the ranking of the different universities done by special research institutions or journals based on several evaluation criteria (*Kőmíves-Dajnoki, 2015*).

INTRODUCTION OF INTELLECTUAL CAPITAL MEASUREMENT METHODS

Measurement of intellectual capital can be divided into two large groups: scorecard methods (Skandia Navigator, Balanced Score Card, VCI [Value Creation Index]) and financial methods. The first group takes into account all the “components” constituting intellectual capital and characterizes them with appropriate indexes. The second group measures intellectual capital on an organizational level and based on financial aspects (*Luthy, 1998*). The group of financial evaluation can be further divided into three more categories:

1. *Direct Methods*: They attempt to estimate the monetary value of intellectual capital by identifying its components (TVC [Total Value Creation]).

2. *Return-based methods*: These methods investigate the return of assets invested in intellectual capital and determine their value as a function of return (EVA [Economic Value Added], MVA [Market Value Added], CIV [Calculated Intangible Value], VAIC [Value Added Intellectual Coefficient], Baruch-Lev’s knowledge capital valuation).

3. *Market Value Based Methods*: Its book value reduces market capitalization of the company, and the difference will be the value of intellectual capital (Tobin Q ratio, Stewart’s intellectual capital) (*Sveiby, 2001; Luthy, 1998*).

BARUCH LEV’S KNOWLEDGE CAPITAL VALUATION METHOD

According to Baruch Lev, the physical assets of a company alone do not generate value, so all surplus is linked to intellectual capital. This finding needs to be clarified by accepting these assets easily acquirable from the market, mass-produced and standardized (*Juhász, 2004*). The basis for this approach is that physical, financial and intellectual assets essentially provide the performance of companies, and these assets generate revenue in the future as well. Measurement methods generally do not deal with the future value creation of intellectual capital, so Lev’s method aspires to pay attention to this as well. It deducts the income of physical and financial assets from the financial gains of the company, which results in the income generated by intellectual capital. Assuming that this financial result will continue to appear in the future, intangible capital can be estimated. According to Lev, the function determining the economic performance of companies is the following

$$\text{Economic performance} = \alpha * \text{Tangible assets} + \beta * \text{Financial assets} + \gamma * \text{Intangible assets}$$

Within the formula, α , β and γ represent the contribution of a unit of the given assets to corporate performance. For measuring corporate performance, Lev suggests the average of past and future results. Future earnings can be estimated based on sales estimates or based on the forecasts of financial analysts. In general, the income of the past and the next 3-5 years is taken into account, so normalized income will be a weighted average of 6 to 10 years, with future revenue being more weighted. The second step is to determine the value of the three asset groups. Financial and physical assets can easily be determined from the company’s balance sheet. The value of the third asset group is obtained by estimating the rate of return of physical and financial assets (€ and €) and then multiplying them by the value of the related assets, which results in their contribution to the income that is deducted from the profit of the company. The remaining part represents the contribution of intangible assets, which divided by the expected yield rate results in the intangible capital (*Figure 2*).

In the scope of his research activities, Lev concluded that corporate profitability estimates are less accurate when approached from the aspect of material and financial assets than utilizing intellectual capital to measure it. An additional advantage of this method might be that it can distinguish under- and overpricing of shares (*Gu-Lev, 2003*).

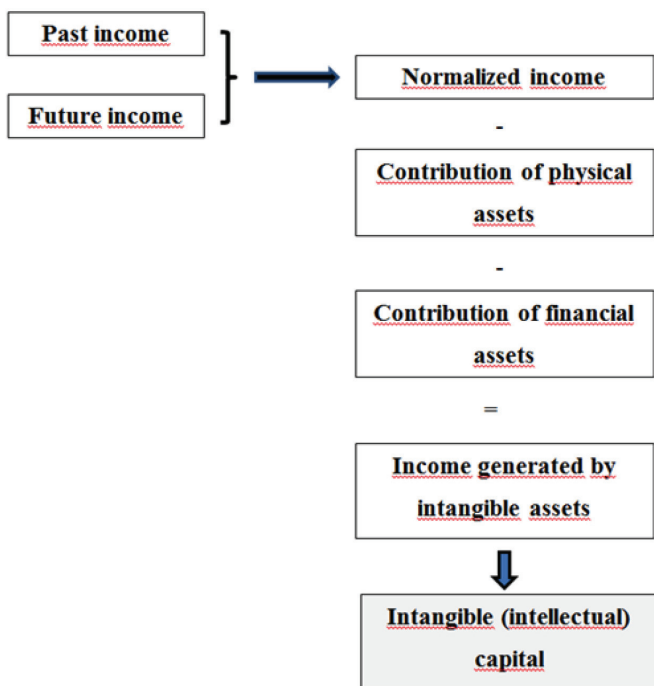


Figure 2: The process of determining intangible capital according to Baruch Lev
 Source: Own editing based on Gu-Lev (2003)

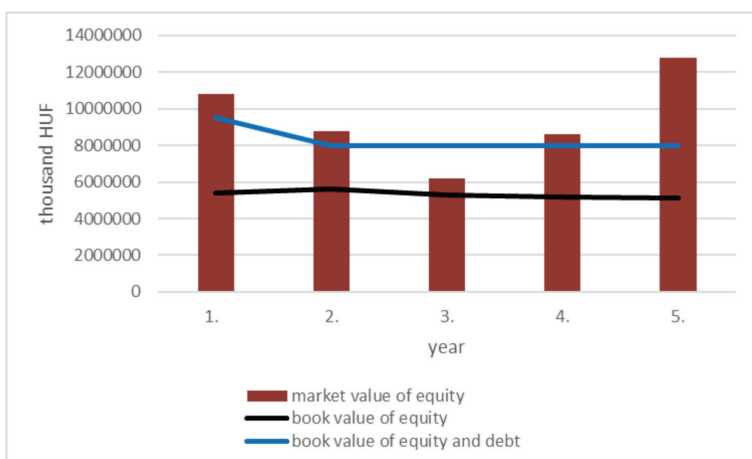


Figure 3: Equity of ANY Plc.
 Source: Own editing based on annual financial statements and own calculations

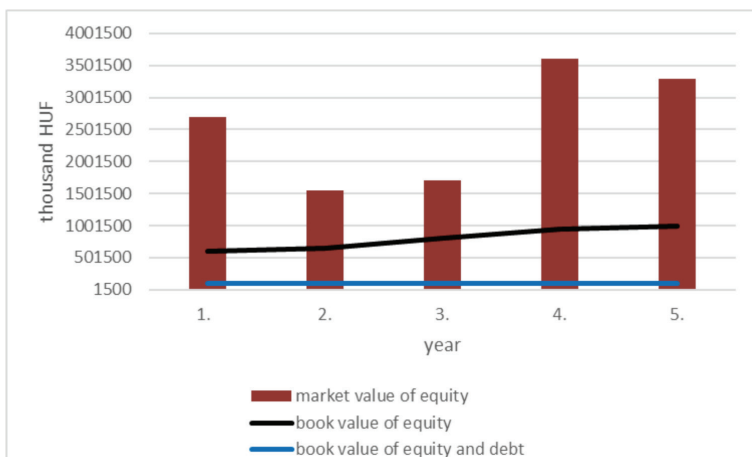


Figure 4: Equity of Kulcs-Soft Plc.
 Source: Own editing based on annual financial statements and own calculations

CALCULATION OF BARUCH-LEV'S KNOWLEDGE CAPITAL VALUATION IN PRACTICE

ANY Biztonsági Nyomda (ANY Security Printing House) Plc. and Kulcs-Soft Plc. stock exchange companies have been selected for the study. When selecting them, it was our objective to involve companies from different industrial sectors, where the presence of intellectual capital associated with their activity is presumable. We used publicly available documents to collect the information required for calculation and applying the methods.

Equity and market value of ANY Biztonsági Nyomda Plc. are different, the market value is higher than the amount represented on the balance sheet. Except for the year 2012, the market value of equity is higher than all the liabilities of the company, which means that it is presumable that the company possesses intellectual capital (Figure 3).

The presence of intellectual capital is also assumable in the case of Kulcs-Soft Plc., as the market value of equity is much higher than the book value of both the equity and all corporate capital (Figure 4).

Based on Figures 4-5, it can be laid down that the same is true for the investigated companies, namely the market values are higher than their book value, and that surplus must have some underlying content, therefore the presence of intellectual capital in companies is likely.

The value of intellectual capital according to Lev's method was determined using Monte Carlo simulation, which is an analytical method that calculates model input values by generating random numbers, and utilizes them to operate the model; the results can be used for the evaluation of the model (Pokorádi-Molnár, 2010). The method for determining the value of intellectual capital is based on the economic performance measured by income. To calculate the so-called normalized income, we had the after-tax results of the last five years, and we estimated them for the next five years.

VALUE OF INTELLECTUAL CAPITAL – KULCS-SOFT PLC.

In the model, the estimation of after-tax profit expects an annual increase of 2%. For estimating future data, we calculate with a 2.5% average long-term inflation. The normalized income for the current year was determined as the average of the normalized income increased by inflation for the previous year and the income for the year under review. Since Lev's model has to consider future data with a larger weight, a one and a half times larger weight was utilized. As the input of the model, it is also required to determine the normalized value of tangible and invested financial assets. The standard deviation was determined as 15%. The expected return on tangible assets was 9-12%, and a 6-9% interval was determined for the invested financial assets.

Using the data, we executed the simulation in the R statistical system, where 5000 model calculations have been carried out for a better approximation to reality.

Table 1: Random Number Generation – Kulcs-Soft Plc.

Kulcs-Soft Plc.	Mean	Median	Lower bound	Upper bound
	thousand HUF			
Profit after taxes	191,380	191,070	135,907	246,576
Tangible assets	63,659	63,572	45,745	81,955
Invested financial assets	58,158	57,968	41,560	75,407

Source: Own editing based on simulation

Table 2: Development of expected earnings – Kulcs-Soft Plc.

Kulcs-Soft Nyrt.	Mean	Median	Lower bound	Upper bound
	%			
Expected earnings of tangible assets	10.51	10.52	9.07	11.94
Expected earnings of invested financial assets	7.5	7.49	6.07	8.93

Source: Own editing based on simulation

Table 3: Expected earnings of intellectual capital – Kulcs-Soft Plc.

Kulcs-Soft Plc.	Mean	Median	Lower bound	Upper bound
After-tax earnings of tangible assets (thousand HUF)	6,691	6,645	4,609	8,999
After-tax earnings of invested financial assets (thousand HUF)	4,361	4,307	2,875	6,101
Result of intellectual capital (thousand HUF)	180,329	180,134	124,457	237,835
Revenue expected from intellectual capital (%)	9.00	9.01	7.85	10,18
Intellectual capital (thousand HUF)	1,990,339	2,012,827	1,359,463	2,746,328

Source: Own editing based on simulation

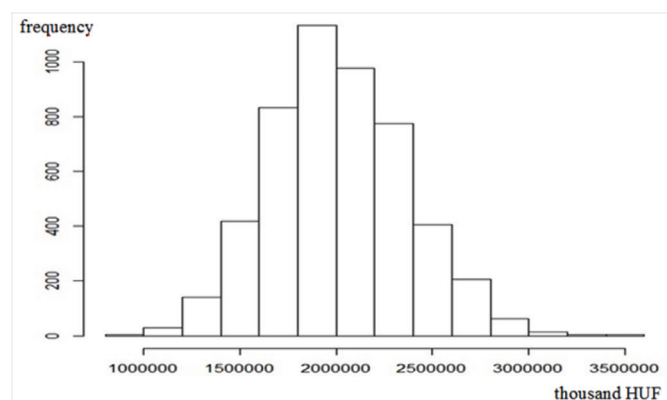


Figure 5: Distribution of intellectual capital – Kulcs-Soft Plc.

Source: Own editing based on simulation

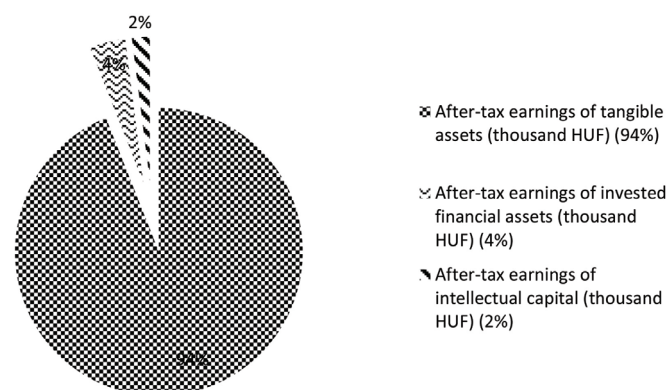


Figure 6: Proportion of after-tax profit of different capital values – Kulcs-Soft Plc.

Source: Own editing based on simulation

The results of the simulation (mean, median, 95% confidence interval) were also calculated for both asset groups and the income (see Table 1)

It is clear that in all three special cases, there are minimal differences between the mean and median values, which means that the results do not differ significantly from a normal distribution (see Table 2).

Further calculations were performed with the obtained values. Multiplying the expected earnings rate of tangible assets by the value of tangible assets, we get the after-tax profit of tangible assets. After-tax earnings of invested financial assets can be determined the same way. The after-tax earnings of intellectual capital are equal to the profit after taxation minus the two previously calculated income types (see Table 3). As the expected earnings of intellectual capital, we have taken the mean value of the other two expected earnings, which can be used to determine the value of intellectual capital as the quotient of the result generated by it and its expected earnings.

Value of intellectual capital is very high compared to tangible assets and invested financial assets.

After-tax earnings of tangible assets (6,691 thousand HUF) represents 4% of total after-tax profit. After-tax earnings of invested financial assets (4,361 thousand HUF) represents only 2% of total after-tax profit.

Intellectual capital contributes to the after-tax profit in the highest proportion, by 94% (see Figure 6). In case we take into account the value of the above groups – and not their contribution to the after-tax result – we still get a similar result. Intellectual capital here also accounts for 94%, while the remaining 6% is equally divided between tangible and financial assets.

Table 4: Development of expected earnings – ANY Biztonsági Nyomda Nyrt.

ANY Biztonsági Nyomda Plc.	Mean	Median	Lower bound	Upper bound
	%			
Expected earnings of tangible assets	10.50	10.48	9.08	11.93
Expected earnings of invested financial assets	7.51	7.51	6.09	8.93

Source: Own editing based on simulation

Table 5: Result of random number generation – ANY Biztonsági Nyomda Plc.

ANY Biztonsági Nyomda Plc.	Mean	Median	Lower bound	Upper bound
	thousand HUF			
Profit after taxes	899,016	898,415	624,028	1,156,142
Tangible assets	2,233,222	2,236,314	1,567,532	2,876,546
Invested financial assets	774,633	772,928	543,190	1,000,448

Source: Own editing based on simulation

Table 6: Expected earnings of intellectual capital – ANY Biztonsági Nyomda Plc.

ANY Biztonsági Nyomda Plc.	Mean	Median	Lower bound	Upper bound
After-tax earnings of tangible assets (thousand HUF)	234,398	232,873	159,297	314,654
After-tax earnings of invested financial assets (thousand HUF)	58,198	57,264	38,308	80,971
Result of intellectual capital (thousand HUF)	606,419	607,050	323,501	877,163
Revenue expected from intellectual capital (%)	9,01	9,00	7,85	10,16
Intellectual capital (thousand HUF)	6,780,890	6,774,208	3,469,084	10,225,241

Source: Own editing based on simulation

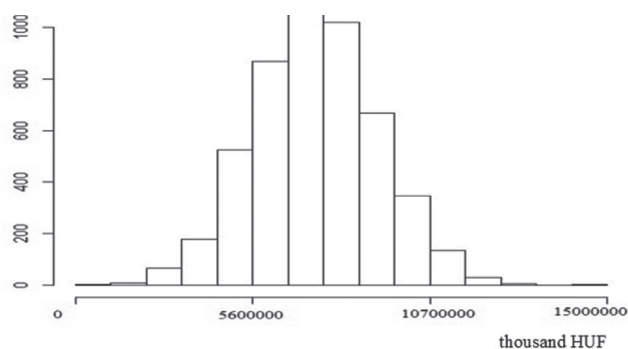


Figure 7: Distribution of intellectual capital – ANY Biztonsági Nyomda Plc.

Source: Own editing based on simulation

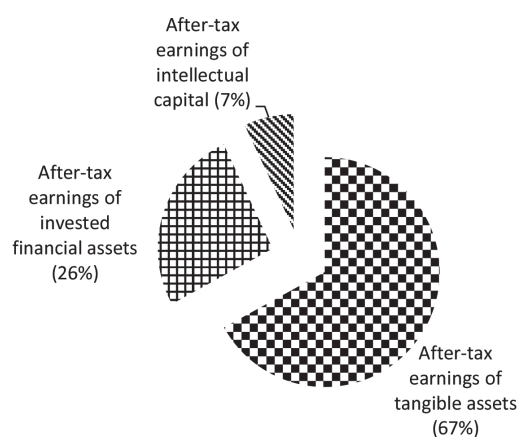


Figure 8: Proportion of after-tax profit of different capital values – ANY Biztonsági Nyomda Plc.

Source: Own editing based on simulation

VALUE OF INTELLECTUAL CAPITAL – ANY BIZTONSÁGI NYOMDA PLC.

Although the two companies operate in somewhat different fields, to make it easier to compare the obtained results, we have taken into account similar conditions in the case of this company as for Kulcs-Soft Plc. The expected earnings derived from the random number generation of tangible assets and invested assets are presented (see Table 4).

The results of the simulation of expected earnings of tangible assets and invested financial assets were also calculated (see Table 5)

The process of calculation was the same for ANY Biztonsági Nyomda Plc. as in the case of Kulcs-Soft Plc. (see Table 6).

The most frequent value is 6 774 208 thousand HUF, and the sums are mostly within the confidence interval (see Figure 7).

In the case of the distribution of after-tax profit, invested financial assets contribute at the lowest extent (7%) to the value of the company (see Figure 8). Tangible assets are at the second place with 26%. Intellectual capital contributed the largest proportion to the after-tax profit with 67%. Obviously, similar proportions are found if the value itself is taken into consideration, with the difference that the invested financial assets amount to 8% and the tangible assets to 23%. Thus, intellectual capital amounts to 69% amongst the assets, based on this method.

SUMMARY

It is observable that the market value of companies differs from their book value. In 2000, Baruch Lev examined the market value/book value ratio of the shares within the

S&P500 index found a value above 5 in the average of 500 shares, which also underpins the difference between market value and book value. From this result, it can be seen that in average, only one-fifth of the market value is demonstrated by accounting in the analyzed year and the greater part of the market value is not accounted for (Baruch-Daum, 2004). We investigated how general this value is, how the index developed in recent years, how decisive is the value discussed reported by Lev ([http://comstockfunds.com/\(X\(1\)S\(oq4jin24ggzn3w45k4lm1i55\)\)/files/NLPP00000/030s.pdf](http://comstockfunds.com/(X(1)S(oq4jin24ggzn3w45k4lm1i55))/files/NLPP00000/030s.pdf))

The value of the index was the highest in 1999-2000. However, it showed a significant fluctuation between 1979 and 2016. From 1.2 in 1982, the index exceeded five by 2000 and then declined again and except for the period between 2009 and 2013 it has been above 2.4; the average of the period between 2000 and 2016 was 2.75 (<http://www.multpl.com/sp-500-price-to-book>).

It can be stated that regarding its tendency for the difference between market and book value of shares has increased. Although this ratio is not as high as the value published in the Lev study, it is still a question, how this difference can be explained? According to the majority of researchers, the difference between market and book value is due to the human factor (human resources), customer capital, and network capital. However, some authors attribute a significant role to research and development, growth or even strategy. It seems that all of the factors listed above jointly contribute to the growth of corporate value with a smaller or bigger weight.

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- <http://www.multpl.com/s-p-500-price-to-book>

The Main Challenges and Constraints of the Economic Development of Taiwan

ABSTRACT

Beyond a comprehensive review on Taiwan's economy, the main objective of the present study was to find answer to two questions. The first issue is whether Taiwan followed a classical model of the Asian Newly Industrializing Economies (ANIEs), or in spite of similarities at first sight, it rather had its own, individual way of development. To examine this question the author made a comparison between Taiwan and the Republic of Korea (South Korea) and beside the obvious similarities, a number of significant differences were found.

The other main question this study was focused on is the present and future economic and social challenges which influence Taiwan's future development as well. From among these characteristics the author pointed out the issue of the high exposition (especially in terms of FDI) and growing dependence on mainland China (the People's Republic of China), the need for a shift in terms of the main drivers of the future economic development to preserve Taiwan's competitiveness and mitigate the risks of brain drain and social unrest. It looks evident that Taiwan has to give up insisting to the principle of low labour costs, and this may give impetus to the two-decades long salary stagnation and to the domestic consumption. Taiwan may only be competitive in the future if it gave an increasing focus to the domestic R&D and innovation in the new industries and also puts more emphasis on sustainability.

Key words: Taiwan, ANIEs, Korea, economic development, competitiveness

JEL Classification: R11, F14, F54, F59, N45, O53, O57

INTRODUCTION

The island of Taiwan (formerly called Formosa) is located off the south-eastern coast of the continental China, at the western edge of the Pacific Ocean, between Japan and the Philippines. The Central Mountain Range divides the east and west coasts and stretches from north to south. With Japan to the north, mainland China (the People's Republic of China, PRC, hereinafter: mainland China) to the west, and the Philippines to the south, Taiwan has always been a location of strategic maritime importance since ancient times. It has played an important role in the development of Asia as well as in world history, politics and trade. As a result, Taiwan (named as Republic of China, ROC, hereinafter: Taiwan, which comprise several smaller archipelagos in the South China Sea as well) now enjoys a high level of openness and cultural diversity. Taiwan's geographical and historical uniqueness has given rise to a diversity of ethnic groups, cultures, and languages. There are 380,000 people who belong to twelve officially recognized indigenous tribes, each with their own social structure, language, and cultural traditions. Taiwan has a population of 23

million people who still observe their culture and still speak regional Chinese dialects in addition to Mandarin (MOE Taiwan, 2017).

Taiwan (is relatively poor in mineral resources however it has small deposits of coal, natural gas, limestone, marble, asbestos and arable land. The majority of the island is covered by a mountain range, with more than 300 peaks over 3,000 m above sea level. Its highest point is Yu Shan (3,952 m). Therefore, Taiwan has very limited possibilities for agriculture. According to the figures of CIA Factbook (2017), based on estimation, the ratio of agricultural land is 22.7% only. The population of Taiwan was 23,464,787 (July 2016), while life expectancy at birth: total population: 80.1 years (male: 77 years, female: 83.5 years (2016) (CIA, 2017).

After the 1960s, Taiwan underwent a rapid economic and industrial reform, also experienced remarkable social development. The economic achievements of the 1970s and 1980s allowed Taiwan to rank among the Asian Tigers and, in the 1990s, among developed countries. Since the 1980s, the economic structure of Taiwan gradually shifted from labour-intensive industries to high-tech industries, wherein the electronics industry was particularly vital to the world's economy. Taiwan has excelled in the semiconductor, optoelectronics, information technology, communications, and electronics fields. At present, the economy is shifting toward nanotechnology, biotechnology, optoelectronics, and the tourism service industry. Moreover, international trade is the economic lifeline of Taiwan. Japan and the United States were Taiwan's top two trading partners until 2005, when mainland China took over as Taiwan's main import/export trading region, with Japan and the United States coming in second and third. In recent years, the unfavourable financial situations of the USA and European economies and the economic slowdown in mainland China had a joint impact on the economic performance of Taiwan (MEET-Taiwan, 2017).

Taiwan has a dynamic capitalist economy with gradually decreasing government guidance on investment and foreign trade. Exports, led by electronics, machinery, and petrochemicals have provided the primary impetus on its economic development. This heavy dependence on exports exposes the economy to fluctuations in world demand. Taiwan's diplomatic isolation, low birth rate, and rapidly ageing population are other major long-term challenges. According to estimated figures of CIA World Factbook (2017) Taiwan's PPP-based GDP (purchasing power parity) was 1.125 trillion USD, GDP (official exchange rate) was 519.1 billion USD (2015), while the GDP real growth rate was 1% (2016). The per capita GDP (PPP) was 47,800 USD (2016), while the ratio of gross national saving was 35.7% of GDP (2016).

Table 1: List of Countries by Projected GDP – the Top 25

Country/ Economy	GDP Nominal (billions of USD)					GDP PPP (billions of Int. USD)					PPP/ Nom
	2016	Share	Rank	2020	Rank	2016	Share	Rank	2020	Rank	
United States	18,561.934	24.7	1	21,927	1	18,561.934	15.6	2	21,927	2	1.000
China	11,391.619	15.1	2	16,458	2	21,269.017	17.9	1	29,348	1	1.867
Japan	4,730.300	6.29	3	5,506	3	4,931.877	4.14	4	5,483	4	1.043
Germany	3,494.898	4.65	4	4,008	4	3,979.083	3.34	5	4,583	5	1.139
United Kingdom	2,649.893	3.52	5	2,928	6	2,787.741	2.34	9	3,244	9	1.052
France	2,488.284	3.31	6	2,851	7	2,736.717	2.30	10	3,185	10	1.100
India	2,250.987	2.99	7	3,297	5	8,720.514	7.32	3	12,842	3	3.874
Italy	1,852.499	2.46	8	2,046	9	2,220.580	1.86	12	2,518	12	1.199
Brazil	1,769.601	2.35	9	2,214	8	3,134.892	2.63	7	3,631	8	1.772
Canada	1,532.343	2.04	10	1,856	10	1,674.313	1.41	16	1,973	17	1.093
Korea (Rep.)	1,404.383	1.87	11	1,747	11	1,928.621	1.62	13	2,373	13	1.373
Russia	1,267.754	1.69	12	1,698	12	3,745.084	3.14	6	4,309	6	2.954
Australia	1,256.640	1.67	13	1,574	13	1,188.764	0.998	19	1,454	20	0.946
Spain	1,252.163	1.66	14	1,457	14	1,689.710	1.42	15	1,992	16	1.349
Mexico	1,063.606	1.41	15	1,325	15	2,306.668	1.94	11	2,800	11	2.169
Indonesia	940.953	1.25	16	1,274	16	3,027.827	2.54	8	4,119	7	3.218
Netherlands	769.930	1.02	17	893.2	18	865.908	0.727	27	1,013	29	1.125
Turkey	735.716	0.978	18	912.5	17	1,669.893	1.40	17	2,072	15	2.270
Switzerland	662.483	0.881	19	744.8	21	494.303	0.415	39	573.6	40	0.746
Saudi Arabia	637.785	0.848	20	816.6	19	1,731.229	1.45	14	2,074	14	2.714
Argentina	541.748	0.720	21	773.4	20	879.447	0.738	26	1,062	28	1.623
Taiwan	519.149	0.690	22	590.4	22	1,125.482	0.945	21	1,335	22	2.168
Sweden	517.440	0.688	23	581.6	24	498.130	0.418	38	595.0	37	0.963
Belgium	470.179	0.625	24	543.1	26	508.598	0.427	37	587.2	39	1.082
Poland	467.350	0.621	25	582.7	23	1,052.249	0.884	24	1,302	24	2.252

Source: Own edition on the basis of Statistic Times (IMF data), 2016

In 2016, the composition of GDP by sector of origin was as follows: agriculture (1.8%), industry (36.1%) and services (62.1%). The main agricultural products and commodities are rice, vegetables, fruit, tea, flowers; pigs, poultry and fish. The main industries are: electronics, communications and information technology products, petroleum refining, chemicals, textiles, iron and steel, machinery, cement, food processing, vehicles, consumer products, pharmaceuticals. In 2015, the labour force was estimated 11.68 million, the division of which by sectors were as follows: agriculture (5%), industry (36%), services (59%). The unemployment rate was 3.9% in 2016, 0.1% higher than a year before. In 2016, the Taiwanese public debt was 32.7% of GDP (the same like a year before), while in 2016 the budget had a 0.6 percent deficit. In 2016, the inflation rate (consumer prices) was 1.6 %, a year before it was -0.3%. In 2016, the total exports of Taiwan amounted 314.8 billion USD (in 2015: 335.5 billion USD), while the total amount of imports was 248.7 billion USD in 2016, (262.9 billion USD in 2015). The main export commodities are: semiconductors, petrochemicals, automobile/auto parts, ships, wireless communication equipment, flat displays, steel, electronics, plastics, computers, while the main items of imports: oil/petroleum, semiconductors, natural gas, coal, steel,

computers, wireless communication equipment, automobiles, fine chemicals, textiles. Taiwan has the sixth biggest reserves of foreign exchange and gold the total amount of which was estimated 456.9 billion USD (on December 31, 2016), one year before it was 430.7 billion USD. Taiwan's total amount of external debts was estimated 155.4 billion USD (on 31st December, 2016) while one year before it was 159 billion USD (CIA World Factbook, 2017).

Taiwan has its own currency, the New Taiwan Dollar (TWD), the exchange rate of which is determined by market forces. However, when seasonal or irregular factors disrupt the market, the bank of issue (the Central Bank of the Republic of China/Taiwan/, CBC) may intervene to maintain an orderly foreign exchange market. Otherwise CBC promotes financial liberalization and internationalization. The management of capital movements is market based. In general, capital can flow freely in and out of Taiwan. The CBC's management philosophy of its foreign exchange reserves centres around liquidity, security, and profitability. The foreign exchange reserves have also been used to promote economic development and industrial upgrading According to CBC the actual exchange rate of TWD against USD (Interbank Spot Market Closing Rates) was 30.218 on 28th April, 2017 (CBC, 2017).

Table 2: Taiwan's main economic indicators between 2000 and 2016

	2000	2005	2010	2011	2012	2013	2014	2015	2016
GDP (USD billion at current prices)	331.5	375.8	446.1	485.7	495.8	511.6	530.5	525.2	529.7
Per capita GDP (USD at current prices)	14,941	16,532	19,278	20,939	21,308	21,916	22,668	22,384	22,530
Real GDP growth rate (%)	6.4	5.4	10.6	3.8	2.1	2.2	4.0	0.7	1.5
Total exports (USD billion)	151.9	199.8	278.0	312.9	306.4	311.4	320.1	285.3	280.3
Total imports (USD billion)	140.7	185.4	256.3	288.1	277.3	278.0	281.8	237.2	230.6
Consumer price inflation (%)	1.3	2.3	1.0	1.4	1.9	0.8	1.2	-0.3	1.4
Unemployment rate (%)	3.0	4.1	5.2	4.4	4.2	4.2	4.0	3.8	3.9

Source: Directorate-General of Budget, Accounting and Statistics, Executive Yuan, Taiwan (cited by DBIT update, 2017)

According to Statistics Times (using database of IMF (2016 October) Taiwan was at No 21 place in terms of the amount of GDP on current price basis and No. 21 in purchasing parity basis (PPP), while foreseeably it would keep its present position in 2020 in PPP basis. On current price basis, it would likely slip one grade back to the 22nd position as it can be seen on Table 1.

THE OBJECTIVES OF THE RESEARCH

With the completion of the present study the author aimed give an insight to the most important social and economic challenges of Taiwan nowadays. In the author attempted to find an answer to the question whether Taiwan just followed the successful model of Japan and implemented the same economic policy instruments like other newly industrializing economies in Asia, or it had a special Taiwanese way. For this reason, the author made a comparison between Taiwan and the Republic of Korea (hereinafter: South Korea) in terms of several economic and non-economic factors.

In addition, the author tried answer another question: which are the main economic and social challenges which influence Taiwan's development at present and in the foreseeable future.

MATERIAL AND METHODS

This study is based on secondary and partially primary research information. Most of the secondary information derived from the bibliography in this field which was available in Taiwanese sources, principally in the libraries of National University of Taiwan (NTU), Shih Chien University, Academia Sinica. For statistical data, the author used several international sources of database (CIA World Factbook, IMF) and also of the Directorate General of Customs, Ministry of Finance of Taiwan.

Further to all this, mention must be made about the fact that the author had the privilege to spend two months in Taipei at Shih Chien University in 2017 (March – May) with the fellowship of the Oriental Business and Innovation Centre of BBS. During his stay in Taiwan, the author had personal meetings and made interviews with a number of leading academic professionals of the relevant fields (economy, sociology, international studies, etc.) at Taiwanese institutes and universities (National Taiwan University, National Chengchi University, Academia Sinica. Moreover, experts form the fields of business and administration were also interviewed, like the Investment and Trade Director of the Hungarian Trade Office in Taipei, and also Tai-

wanese businessmen in farming and food-processing industry. The outcomes of all these meetings and interviews – as valuable primary information – are reflected in this paper as well.

THE TAIWANESE ECONOMIC MIRACLE –

THE EXPORT-ORIENTED ECONOMIC DEVELOPMENT

According to Chen (2016) the economic development is a complicated phenomenon. Many factors may affect the speed, quality, and direction of economic development. But the major factors affecting Taiwan's economic development in the past 120 years are mostly international ones – especially the mechanism called *international factor price equalization*. He believed Taiwan's economic development was not a miracle, as some people claimed, but rather an achievable outcome for all developing countries facing the same international opportunities. Moreover, he recalled Samuelson (1948) who had proved a theorem of international factor price equalization almost 70 years ago. This theorem stated that, under certain assumptions, the price of production factors, such as the wage rate, will become equal between two countries when the countries have free trade with each other. Chen also referred to Mundell (1957), who demonstrated that even with no trade, the international movement of even only one production factor can also equalize the factor prices of two countries. Since these theories have some assumptions that may not be true in the real world, the wage rate of different countries may remain unequal. Nonetheless, as the theoretical analyses predict, even if some of the assumptions do not hold, the wage rate of two countries, once they are open to international trade, will become closer to each other in most cases (Chen, P 2016).

Taiwan began to experience significant trade with richer countries when the Qing imperial government was forced to open several ports in China to international trade, including two ports in Taiwan in 1860. After Taiwan was ceded to Japan in 1895, it began to engage in large-scale trade with Japan. In addition, investment, modern technology, and educated people moved to Taiwan from Japan. Before 1945, the economic relationship between Taiwan and Japan resembled a modern common market. Taiwan could export a variety of products in which Taiwan had comparative advantage to Japan without paying tariffs. Factor flows between Taiwan and Japan were also cost free. Consequently, income and wage rates in Taiwan grew closer to those of Japan (which were higher). The factor price

equalization mechanism began to contribute to the economic development of Taiwan. In 1937, four decades after Japan occupied Taiwan, per capita income in Taiwan reached roughly 75 percent of Japan's (Chen, P. 2016).

THE DEVELOPMENT MODEL OF TAIWAN COMPARING TO SOUTH KOREA – SIMILARITIES AND DIFFERENCES

The peculiar and successful economic development of the Asian New Industrialising Economies (ANIEs), especially the cases of South Korea and Taiwan have received considerable attention from economists. Many studies and analyses have already been prepared and published to find out what was the secret of their successful models. It is also evident that from historical, political, social, cultural aspects there were many similarities between the two entities. Both of them were in severe economic and social situation before their take-off and prosperity came about. South Korea, once one of the poorest economies in the world and devastated by the Korean War (1950-53), is now the world's No. 12 largest economy in terms of the amount of GDP, while Taiwan has turned itself from a small island with a history of colonization into No. 21-22 largest economy in the world (see Table 1).

South Korea and Taiwan experienced colonization but developed their economies very rapidly under a government-led development paradigm. Due to limited natural resources, both governments employed an export-oriented industrialization policy. Both economies also were favoured by high rates of domestic savings and human capital characterized by high levels of education and a good work ethic (Kim, H.– Heo, U. 2017).

With economic development, both governments also went through the transition to democracy, which ended authoritarian rule in Taiwan in 1987, in South Korea in 1988.

However, besides the similarities, there were also noticeable differences between those economic development models which were applied in South Korea and Taiwan. The South Korean government monopolized credit allocation, providing preferential credit to big export-oriented corporations to promote economic development. By contrast, small and medium-size enterprises that were mostly family-owned led economic development in Taiwan (Kim, H.– Heo, U. 2017).

Hattori and Sato (1997) in their study also assumed and claimed that the development mechanisms in South Korea and Taiwan were different and came up explanatory hypotheses based on historical and economic facts. According to them there were different levels of capital accumulation at the starting points of post-war economic development, or industrialization, in the two states. In South Korea hopes were very high for accelerated development, but the economy itself was still at a very low level. This situation most likely forced policymakers and the people to believe that development should be carried out through a strong government-led mechanism. The fact that South Korean level of economic development was lower than that of Taiwan looks evident in the figures of per capita GNP. In 1961, per capita GNP in South Korea was only 55 percent of the figure recorded by Taiwan. Taiwan was already producing sugar as a powerful agricultural exporter, enabling a certain

level of foreign currency acquisition. South Korea fell behind in this aspect. Industrialization in South Korea also lagged behind. Looking back on the period during which both countries were colonies of Japan, industrialization was progressing during the 1930s and the Korean Peninsula was developing ahead of Taiwan. However, most of the factories were located in the north, and with the division of the peninsula after World War II, South Korea was cut off from the major industrial regions. Also, most of the manufacturing enterprises including SMEs in pre-war Korea were owned and managed by Japanese. In the other hand, in Taiwan, although many large corporations were also owned and managed by Japanese, the SMEs were owned and managed by Taiwanese. Therefore, after the war South Korea experienced setbacks both in terms of manufacturing facilities and human resources, even before the destruction inflicted on the economy by the Korean War. As a result, the resources, especially capital, necessary for economic development was seriously lacking in South Korea. In order to utilize effectively the scarce resources that were available, it was hoped that the government would step in and ration them in a centralized manner. For this purpose, the Park Chung-hee administration nationalized the country's financial institutions and took control of loans from overseas. In the other hand, Taiwan's economic level was relatively higher, and although capital was scarce too, the situation was by no means as critical as in South Korea, allowing Taiwan to take a more relaxed approach to economic development (Hattori, T. – Sato, Y. 1997). According to their findings they described a general scheme of the Taiwanese and South Korean developmental model, see Figure 1.

Chau (2001a) in his study pointed out that from the beginning, the South Korean government took on an active and direct role in guiding and promoting economic growth, much more so than the governments of Japan and Taiwan. The main objective was growth maximization. This was considered essential to survival, to counter the threat of North Korea, which was stronger in terms of military capacity and economic potentials in early 1960s. The strategy was clear-cut and simple: outward-, industry- and growth-oriented (or "OIG-oriented"). To do well in export was considered of paramount importance. The phrase "export first" was written into the second five-year plan of South Korea (1967-71), and "Nation building through exports" was President Park Chung-hee's favourite slogan (Chau, L-C. 2001a).

Abe and Kawakami (1997), in their study examined the reliability of that belief – based on a broad consensus – that the backbone of industrialization of South Korea was the sphere of chaebols (conglomerate business groups) rather than small and medium-size enterprises (SMEs), while in Taiwan's economic development, the SMEs played been the driving force for growth.

According to this general consensus South Korea was considered as „big business economy” while Taiwan an „SME economy.” Their conclusion was that the statistical data to the end of the 1980s confirmed this generally held perception contrasting enterprise size in the two economies. However, later on, between 1986 and 1991 the position of enterprises employing

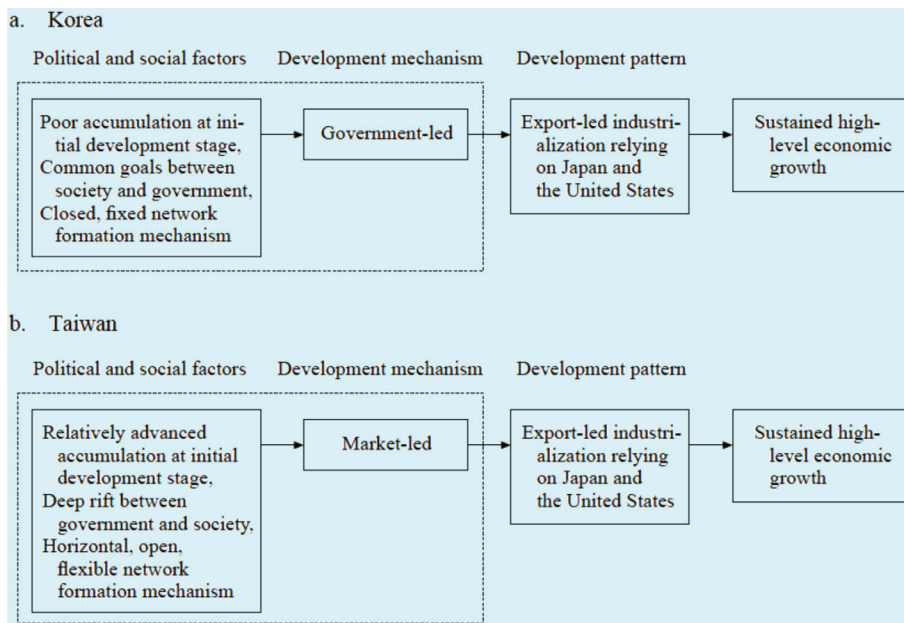


Figure 1: Development Patterns and Development Mechanisms in South Korea and Taiwan

Source: Hattori, T. – Sato, Y. (1997)

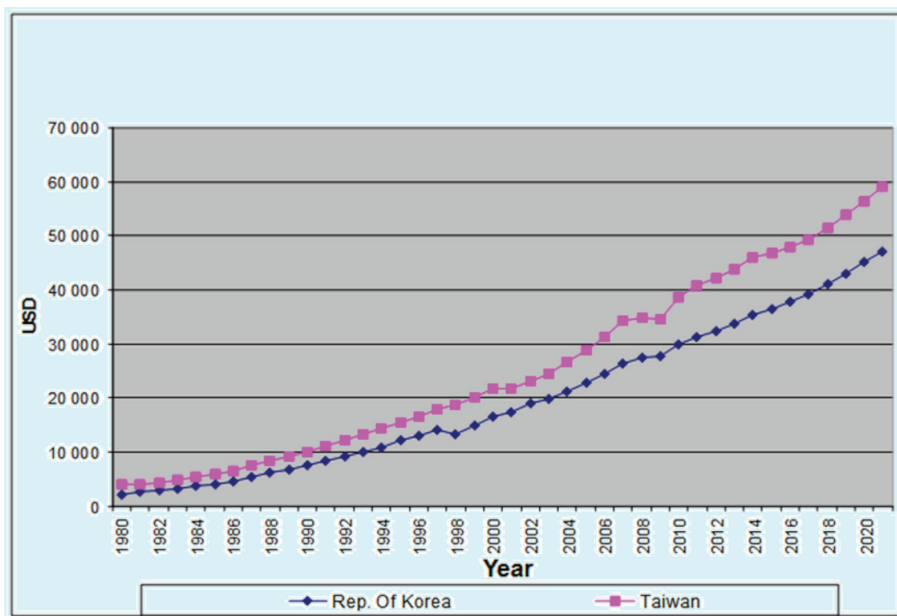


Figure 2: Per Capita GDP (PPP) of Taiwan and of the Republic of Korea from 1980 till 2021 (forecast) in USD

Source: own compilation on the basis of Economy Watch (data gained from the International Monetary Fund, <http://www.economywatch.com>)

more than 500 workers in the Taiwanese economy increased in importance, if only slightly. In other words, the dichotomy in the position of big business in the two economies seemed to have lessened since the mid-1980s (Abe, M. – Kawakami, M. 1997).

Chau et al. (2001b) also underlined that there were differences in the method of industrial targeting too. Taiwan was most specific in identifying and promoting ‘strategic’ industries, with explicit criteria (technology intensity, market potential, high value added and large linkage). Eight strategic industries were chosen in 1983, and 33 targeted leading products were identified in 1992. By contrast, in its technology upgrading effort,

South Korea shifted from industry-specific promotion of the 1970s to functional policies of the 1980s. Policy became more favourable to individual projects rather than sectoral development (Chau et al. 2001b).

South Korea and Taiwan have enjoyed rapid economic development since the early 1960s. Gross domestic product (GDP) per capita in South Korea and Taiwan has continuously increased over the past decades. However, it is also visible that since 1980 the value of per capita GDP (PPP) has always been higher in Taiwan than in South Korea and the gap between them has also been continuously widening. Taiwan’s per capita GDP (PPP) will closely approach 60,000 USD by 2021, while in case of South Korea it will only be slightly above 47,000 USD (see Figure 2).

The most obvious difference between the South Korean and Taiwanese economies is the size of firms and business groups. Kim (2017) on the basis of previous studies (Amsden, 1989, Wade 1990, Kim 1996, Heo and Tan 2003, Heo and Roehrig 2010,) pointed out the issue of big corporations versus small and medium-sized enterprises. The economic concentration is one of the main characteristics of late industrialization as a small number of firms tend to lead economic development. South Korea is a good example: a small number of gigantic family-owned business conglomerates, called chaebols, account for a major portion of the economy’s production. The South Korean government concentrated resources on a small number of firms for two reasons. First, South Korea had limited resources. Second, the government believed that the size of firms was important to compete in the world market. Scarce resources meant

that only a small number of firms received government support, which in turn led to the dominating size of chaebol. For instance, the Hyundai group, the largest chaebol in these early years, expanded at an average rate of about 32 percent from 1972 to 1983, and the five biggest chaebols accounted for 17.4 percent of the total value of the manufacturing sector in 1982 (Kim 1996). By 1999, the top fifty firms in South Korea accounted for 93.8 percent of the country’s GDP (Kim, H. – Heo, U. 2017).

Lin (2017) underlined that Taiwan started her peculiar way of export-oriented industrial development almost at the same time when South Korea did – around the late sixties to the

early seventies. But it was a major difference that unlike in case of South Korea, Taiwanese government did not select directly those companies which were designated to be the backbone of the national economy. There were no chaebols or Japanese style Keiretsu-model. The development went through under the guidance of the government, but the most successful industrial manufacturers – especially in the electronic industry – were self-made men. Another typical trend was that bigger companies with textile or other profiles – recognising the prosperity of the electronic industry – also entered the business. Even though, that by now some of the Taiwanese companies grew big, like Asus, Acer, D-Link and many others, – contrary to South Korea and Japan – it happened only in the course of the recent one or two decades. He pointed out that similarly to South Korea, Taiwan also received significant and regular financial assistance from the United States during the 1950s and in the early sixties – until 1965 (South Korea received the US assistance until 1972). All this gave additional impetus and help the impressive economic growth of Taiwan and South Korea that started just a couple of years later. After 1965, still huge amounts of American financial assets remained in Taiwanese banks that were – and still being – used like a joint fund for development purposes, and the Taiwanese and the US administration decide together about the projects to which support should be rendered (Lin, M-J. 2017).

Chou (2017) pointed out that comparing to South Korea the labour unions have always been much weaker and played less active role. Even though that since 1987 the democratization process has been going on in Taiwan, the peoples' voice, the activation of civil movements can only be seen during the recent 3-4 years (Chou, C-C., 2017). This must be one reason why the level of salaries has been stagnating in Taiwan for two decades.

Comparing the Taiwanese and South Korean R & D sectors, Sanchez-Rubalcava (2014), in his thesis pointed out that there were key differences between South Korea and Taiwan in terms of research and development. He claimed that in contrast to the remarkable similarities in many ways, they differ from each other greatly when looking at the industry data in terms of which the biggest differences could be found. The main difference was in the concentration of research and development, which in South Korea was managed by the largest companies, while in Taiwan the research and development was more uniform and spread out (Sanchez-Rubalcava, D. 2014).

According to Chow (2016) until the 1990s, Taiwan was able to overcome its diplomatic isolation by expanding its trade and investment flows to all of her trading partners with or without official government recognition. Its economy could maintain decent growth rates with an average of 7.49 percent in the

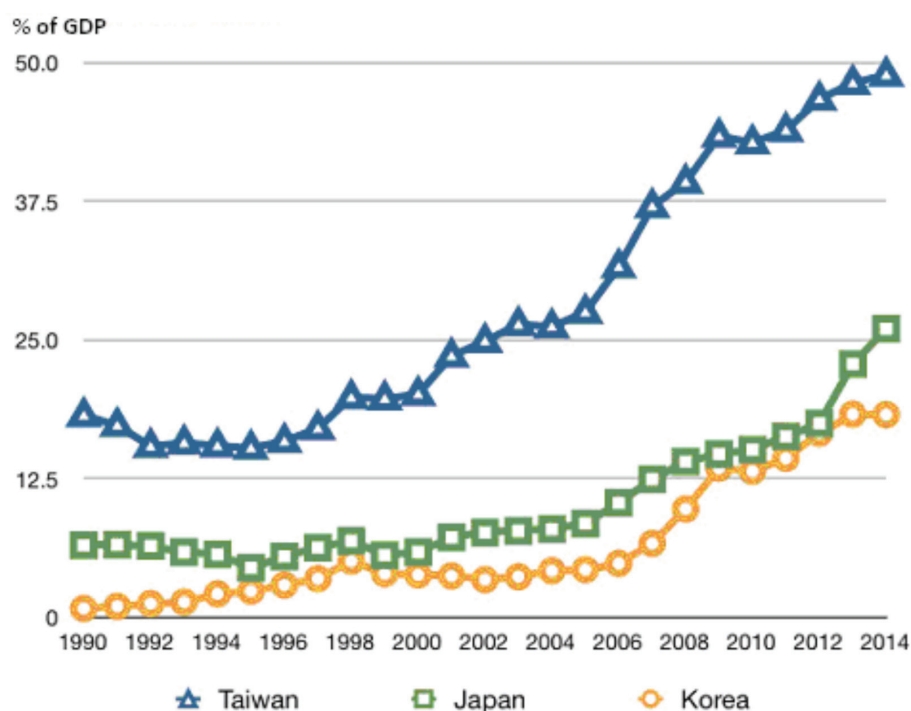


Figure 3: The stock of outward FDI as percentage of GDP in Japan, South Korea and Taiwan, 1990-2014

Source: Chow, P.C.Y. (2016) (on the basis of UNCTAD)

years 1991-1995, a record comparable to other newly industrializing countries (NICs) in the early years of the 1990s. However, the proliferation of the free trade agreements (FTAs) in the Asia Pacific since that time has reduced Taiwan's international economic participation. Unlike South Korea which has signed FTAs with most of its major trading partners, Taiwan has not been able to benefit from a "freer trade" regime through bilateral/plurilateral trade accords. This is because mainland China has prevented those countries with which Taiwan has no diplomatic ties from signing trade accords with Taiwan (Chow, P. C.Y. 2016).

Chow (2016) in his study pointed out another important difference between the two economies: the extent of the outward FDI which is considerably higher in case of Taiwan than in South Korea or even Japan. The stock of outward FDI as percentage of total GDP is shown in Figure 3. By the end of 2012, the stock of outward FDI in total GDP accounted for nearly 50 percent in Taiwan whereas the levels in South Korea and Japan are only 25 percent and below. After Teng Hsiao ping's southern visit in 1992, which reaffirmed mainland China's commitment to reform and openness, more Taiwanese capital flowed to mainland China than to any other country. This rose concerns about overdependence on mainland China (Chow, P. C.Y. 2016).

THE PRESENT STATE AND CHALLENGES OF THE TAIWANESE ECONOMY AND SOCIETY

Taiwan's economy has been experiencing a downturn since the breakout of the global economic crisis since 2008. This is due to the overdependence to the exportation. Both investment and consumption are growing at a slow pace. There are three main factors contributing to Taiwan's economic growth:

Table 3: The main trading partners of Taiwan between January 2010 and December 2016 (in USD)

TIME PERIOD: 2010/01 - 2016/12		TOTAL TRADE			EXPORT			IMPORT					
COUNTRY NAME	RANKING	AMOUNT	SHARE (%)	RANKING	AMOUNT	SHARE (%)	RANKING	AMOUNT	SHARE (%)	RANKING	AMOUNT	SHARE (%)	
													RANKING
TOTAL	—	3,870,481,937,501	100.000	—	2,063,927,788,397	100.000	—	1,806,554,149,104	100.000	—	1,806,554,149,104	100.000	
CODE NO	COUNTRY NAME	RANKING	AMOUNT	SHARE	RANKING	AMOUNT	SHARE	RANKING	AMOUNT	SHARE	RANKING	AMOUNT	SHARE
CN	CHINA	1	849,874,121,091	21.958	1	550,621,746,193	26.678	2	299,252,374,898	16.565	2	299,252,374,898	16.565
JP	JAPAN	2	449,064,978,129	11.602	4	133,174,894,939	6.452	1	315,890,083,190	17.486	1	315,890,083,190	17.486
US	UNITED STATES	3	418,382,104,118	10.810	3	236,007,326,244	11.435	3	182,374,777,874	10.095	3	182,374,777,874	10.095
HK	HONG KONG	4	286,303,112,043	7.397	2	274,231,736,892	13.287	29	12,071,375,151	0.668	29	12,071,375,151	0.668
KR	KOREA, REPUBLIC OF	5	192,244,107,174	4.967	6	85,015,395,809	4.119	4	107,228,711,365	5.936	4	107,228,711,365	5.936
SG	SINGAPORE	6	177,781,209,957	4.593	5	122,537,351,545	5.937	8	55,243,858,412	3.058	8	55,243,858,412	3.058
MY	MALAYSIA	7	105,015,672,106	2.713	9	51,169,394,383	2.479	9	53,846,277,723	2.981	9	53,846,277,723	2.981
DE	GERMANY, FEDERAL REPUBLIC OF	8	102,989,280,640	2.661	10	42,653,252,864	2.067	6	60,336,027,776	3.340	6	60,336,027,776	3.340
SA	SAUDI ARABIA	9	94,178,542,934	2.433	21	11,304,021,581	0.548	5	82,874,521,353	4.587	5	82,874,521,353	4.587
AU	AUSTRALIA	10	80,192,787,768	2.072	15	24,051,355,443	1.165	7	56,141,432,325	3.108	7	56,141,432,325	3.108
VN	VIETNAM	11	78,783,523,775	2.035	7	62,915,973,333	3.048	22	15,867,550,442	0.878	22	15,867,550,442	0.878
ID	INDONESIA	12	74,871,460,201	1.934	13	29,304,555,122	1.420	10	45,566,905,079	2.522	10	45,566,905,079	2.522
PH	PHILIPPINES	13	72,378,076,752	1.870	8	57,228,638,463	2.773	23	15,149,438,289	0.839	23	15,149,438,289	0.839
TH	THAILAND	14	69,303,040,910	1.791	11	41,572,189,113	2.014	14	27,730,851,797	1.535	14	27,730,851,797	1.535
NL	NETHERLANDS	15	56,862,153,984	1.469	12	32,220,576,495	1.561	15	24,641,577,489	1.364	15	24,641,577,489	1.364
KW	KUWAIT	16	45,700,067,249	1.181	57	1,301,606,393	0.063	11	44,398,460,856	2.458	11	44,398,460,856	2.458
IN	INDIA	17	41,942,188,454	1.084	16	24,045,396,147	1.165	19	17,896,792,307	0.991	19	17,896,792,307	0.991
GB	UNITED KINGDOM	18	41,923,498,906	1.083	14	29,245,822,172	1.417	27	12,677,676,734	0.702	27	12,677,676,734	0.702

Source: Directorate General of Customs, Ministry of Finance, (Taiwan)

Table 4: Taiwan's and South Korean Exports to and Market Share in China (2002-2011)

Year	South Korea		Taiwan	
	Amount of Exports (M USD)	Market share (%)	Amount of Exports (M USD)	Market share (%)
2002	28,581	9.7	38,082	12.9
2003	43,161	10.4	49,364	11.9
2004	62,166	11.1	64,760	11.5
2005	76,874	11.6	74,655	11.3
2006	89,818	11.3	87,141	11.0
2007	104,045	10.9	100,986	10.6
2008	112,154	9.9	103,324	9.1
2009	102,125	10.2	85,706	8.6
2010	138,023	10.0	115,645	8.4
2011	147,386	9.6	114,161	7.4

Source: Chang, C-C (2015) on the basis of "The Impact of Taiwan President Ma's Re-election on South Korea's export to China". *Qingdao Newsletter (KOTRA Chingtao Weekly Newsletter)* (March, 2012)

investment, export and consumption. Regarding the investment sector, the government has faced the sovereign debt ceiling, which restricts its capacity for raising public debt. The private investment sector shows limited growth potential. Furthermore, there is little progress in negotiations for FTA (Free Trade Agreement) as well as EFCA (Cross-Straits Economic Cooperation Framework Agreement) follow-up agreements. Negotiations, however, have been started for a cross-strait trade in goods agreement under the ECFA framework (Wang, J-C. 2015).

In order to maintain the technical and business issues between Taiwan and mainland China, the Straits Exchange Foundation (SEF) was established by the Taiwanese government. It is technically a private foundation, but in fact it is funded by the government and controlled by the Mainland Affairs Council of the Executive Yuan (the executive branch of the Taiwanese political leadership). Its role is in fact, a kind of de facto embassy to mainland China, to not officially acknowledge the latter's sovereignty over Taiwan. The SEF is headed by a former Taiwanese foreign minister, Tien, Hung-mao (SEF, 2017).

According to the figures of Table 3 – comprising seven years from 1st January, 2010 to 31st December, 2016 it is very much visible, that Taiwan's No. 1 and No. 2 foreign economic partners are located in East Asia, namely the mainland China and Japan. In terms of the entire bilateral turnover, and in case of Taiwanese exports, mainland China is the biggest partner (even without Hong Kong nearly 850 billion USD turnovers, from which 550 billion USD was the export), while in terms of imports to Taiwan, Japan was the biggest in this period (with nearly 316 billion USD). The United States was at No 3. place both in terms of exports and imports. Hong Kong, South Korea and Singapore are also very important partners, while from Europe only one country, Germany had a place among the Top Ten (with nearly 103 billion USD turnover).

Mention has to be made about the Economic Cooperation Framework Agreement (ECFA), a preferential trade agreement between the governments of mainland China and Taiwan, which aimed to reduce tariffs and commercial barriers between the two sides. The pact, signed on June 29, 2010, in

Chongqing, was seen as the most significant agreement since the two sides split after the Chinese Civil War in 1949 (BBC News, 2010).

Chang (2015) pointed out that whilst legislative ratification of the latest Cross-strait Trade in Services Agreement has been held in abeyance since the Sunflower Movement took place in March 2014. in Taiwan attended a WTO (World Trade Organization) Trade Policy Review meeting in Geneva on September 16, 2014. During this meeting from the end of mainland China concerns were expressed over Taiwan's restrictive measures that substantially limit its direct/portfolio investments in Taiwan. In addition to reiterate its expectation towards the removal of Taiwan's unilateral import bans on basic products from mainland China in compliance with the MFN (Most Favoured Nation)-level obligations of WTO. Beijing has also signalled that, by failing to open Taiwan's domestic economy to China, it will lobby against Taiwan's participation in multilateral pacts such as the Trans-Pacific Partnership (TPP). Also, according to Chang (2015), South Korea and Taiwan both significantly increased their exports to mainland China between 2002 and 2011, however the figures show that South Korea's export expansion was more successful in absolute values. However, South Korea's share within the Chinese market did not change significantly (from 9.7% to 9.6%), while the same in Taiwan's case decreased from 12.9 % to 7,4% (Chang, C-C. 2015), see the comparison in Table 4.

According to Chang (2015) in the long run, keeping restrictive stance towards reciprocal flows from mainland China is definitely not an option for Taiwan. Making prudent policies of cross-strait opening, with appropriate safeguards in place, may not be the panacea for Taiwan's competitiveness, but it is a necessary step to maintain and further enhance its strength in global trade. Taiwan should take a more positive perspective and consider forming a strategic alliance with mainland China, rather than viewing it as an adversary, in order to maximize its relative advantage under this ever-changing global business environment (Chang, C-C. 2015).

According to Wang (2015), the domestic consumption, the average growth of Taiwan's disposable income was approximately one percent in the past ten years. It causes the slug-

gish growth of Taiwan's economy. Lastly the export trade is also largely affected by the up-and-down fluctuations of the global economy, which imply that Taiwan has lost much of its control over its economic growth. However, on the bright side, Taiwan's export and consumption are better off following the recovery of the global economy. Foreign tourist arrivals were expected to exceed ten million in 2016 to significantly increase domestic demand. Moreover, with the establishment of Free Economic Pilot Zones (FEPZs) and the shift in investment from China to Taiwan, by Taiwanese businessmen, the economic growth of 2015 shows signs of recovery. But with the rise of China's high-tech industry, the cross-strait business relationship has shifted from cooperation to competition. However, there are still some doubts about the global economic recovery, Taiwan still has a lot of work to do, though its economic growth in the next two or three years shows promise and has an optimistic forecast. It has to speed up not only in industrial transformation but also sign FTAs to stand a chance in this fierce competition and break through existing trade barriers to get back on the right track of economic growth, at faster pace too. Taiwan has been too much dependent on mainland China. Taiwan is pressured to speed up industrial upgrading and transformation. Moreover, Taiwan has to plan FEPZs (free economic pilot zones) and sign FTAs at faster rate in order to make industrial advancements and maintain competitive advantages over mainland China. Upon accomplishment Taiwan will be able to pursue sustainable economic growth. Besides the aforementioned challenges, there are still some other pressing complications. Such one is the rise of mainland China's supply chain and the fierce industrial competition between the two sides of the Taiwan Strait. In recent years, Taiwanese and foreign companies all face the pressure of localization or joining with the China supply chain. This means the original Taiwanese and foreign suppliers of semi-conductor and other component manufacturers are being replaced. The negative effect can be seen by the recent decrease in the ratio of intermediate goods Taiwan imports from mainland China. It may have resulted from mainland China's import substitution and localized production policy. In 2013, the manufacturing of ICT (information and communication technology) products and optical instruments, which constitute a large part of imported goods, has been hit the hardest, weakening Taiwan's export performance. Therefore, Taiwan has to shift focus to the American reindustrialization process to maintain competitive advantages over mainland China.

The conclusion of Wang (2015) is that industrial transition must speed up and new industries must be introduced in order to attract investment. In addition, service industries should take full advantage on FTAs and ECFA. In doing so, Taiwan can take advantage of China's and ASEAN countries' vast hinterland to secure benefits of economies of scale and create demand for skilled manpower (Wang, J-C. 2015).

Füle (2017) pointed out that during the recent, 8-year period of the KMT-government, (2008-2016), Taiwan made many gestures to improve relations with mainland China. When Taiwan and mainland China concluded the ECFA in 2010, as a part of this framework agreement, a so-called Early-harvest List was

agreed in 2011, which comprised altogether tariffs concessions of 806 product items. He pointed out that the unhindered trade of at least two third of these products was really beneficial for Taiwanese exporters to mainland China, which is interested in the imports of modern technologies from Taiwan. On the other hand, it is a noticeable fact that nowadays around 23 million people are employed by Taiwanese firms in mainland China – which number is comparable to the entire population of Taiwan.

Following ECFA, within few years altogether 22 additional agreements were concluded between Taiwan and mainland China, which covered the field of liberalization of the movement of persons as well. At the beginning only tourist groups, but later on individual travellers were also allowed to travel to the other side of Taiwan Strait. Finally, ECFA became highly debated and the last agreement within its framework on the liberalizing trade in services was not ratified by the Taiwanese legislature.

It even raised public dissatisfaction and created an intense situation in Taiwan, which resulted in the significant occupation of the Taiwanese Legislative Yuan as many people had fears of the fast pace of signing and ratifying so many agreements between the two sides of the Taiwan Strait. It was considered too risky both from political and economic point of view. Finally, it contributed to the victory of the previous opposition, the liberal, Democratic Progressive Party (DPP) in 2016.

He added that Taiwan struggles for any kind of additional possibility to participate in the international arena, however it is very much limited in the shade of mainland China, as the latter prevented most of these efforts. The Free Trade Agreement (FTA) between Taiwan and the European Union is widely promoted by various feasibility studies and would highly benefit both the EU and Taiwan. However, it is stalemated and not likely to be signed unless a similar agreement had already been concluded between the EU and mainland China. He underlined that it is very unlikely that such an agreement would be concluded between the EU and China in the near future, therefore the case of FTA between Taiwan and the EU cannot be on the agenda. He said it can be considered as a breakthrough-sound achievement that mainland China did not prevent the conclusion of the FTA between Taiwan and New Zealand in 2013, as well as the earlier conclusion of an investment protection accord between Taiwan and Japan in 2011 (Füle, J. 2017).

Wang (2015) emphasized another problem facing Taiwan is its unsolved *salary stagnation*. Real salary has stagnated for almost 20 years because of the imbalance of income distribution, not from the lack of economic growth. Salary stagnation serves as an obstacle hindering Taiwan's economic recovery. Although the speed of inflation in Taiwan is relatively low, the increase in salary is even lower. Under such circumstances, Taiwan is struggling to maintain talent in the country, further reinforcing the vicious cycle of low salary (Wang, J-C. 2015).

Cheng (2017) also mentioned the dilemma of salary stagnation. She pointed out that the young generation in Taiwan faces elementary problems establishing families because of the increasing gap between the growing real estate prices and the

stagnating salaries. She mentioned that in the course of the recent two decades even cuts in salaries happened (Cheng, C. 2017).

Chou (2017) pointed out that 60% of college graduates in Taiwan are engineers, many of whom establish ventures and most of them become successful in a course of a couple of years (Chou, C.-C., 2017). However, Hsu (2015) in his study pointed out that the young generation (20-24 years old people) face nowadays even bigger difficulties at the labour market than before. He claimed that Taiwan's labour market had gone through a major change over the past decade. In fact, unemployment among people aged 35 or above had declined since 2003, but joblessness of the age 20-24 age group hit a new high in 2013. He suggested that Taiwan should learn from the US and other OECD countries which use the so-called Active Labour Market Policy (ALMP) to structurally connect the youth to the labour market and also urged for more innovative strategies that systematically could bring back this underrepresented generation, whose members possess with high educational attainment (Hsu, Y-H. 2015)

Lin (2017) outlined the main traps jeopardizing Taiwan's competitiveness "behind the shade" of mainland China:

- Many Taiwanese businessmen went to China to manufacture and enjoy the advantages of the cheap labour. But, it has several risk factors for Taiwan as follows:
- If Taiwanese manufacturers focus too much on the advantages deriving from the low labour costs, in longer run these manufacturers will lose their competitiveness, as the labour costs, even in China are growing. The Taiwanese government has been trying to encourage entrepreneurs to rather do more intensively innovations and increase the value-added content in their products and services.
- As China needs semiconductors in growing quantities, but still not able to meet her own demand from domestic resources. He mentioned that China spent nearly as much on importing semiconductors as on the annual oil imports. Hence, in the recent years China started to intensively develop her own semiconductor industry, which is followed by a special kind of brain-drain process: Chinese firms offer good job opportunities for Taiwanese specialists working in this field. He underlined: this was not prevalent in case of the assembly-manufacturers, just the cutting-edge segment of the industry: the semiconductor design and production. If this process went on, Taiwan would surely face serious difficulties with her competitiveness in this field (Lin, M-J. 2017).

Chow (2016) summarized the tasks of the present administration of Taiwan – under presidency of Tsai Ing-wen (she assumed her office on May 20, 2016) – in order to revitalize Taiwan's economy amid an unfavourable global environment. For Taiwan to benefit economically from its interactions with the rest of the world, in turn, and to enhance its international visibility politically, the Taiwanese government has at least six significant challenges as follows:

- 1) Building on the economic statecraft that has brought participation in the WTO, plurilateral and multilateral trade arrangements;

- 2) Expanding its limited successes in bilateral FTAs negotiations, especially with those countries which have multiple memberships in the emerging trade blocs;
- 3) Continuing economic gains that Taiwan has made through its functional approach to deepen further the de facto economic integration it has achieved through outward investment and its participation in the global value chains (GVCs);
- 4) Maintaining peace and stability in the cross-Strait relations by taking a non-provocative attitude toward China;
- 5) Pursuing membership in the new mega-regional trade blocs to diversify its trade and investment flows so as to mitigate its asymmetric dependency on China's market;
- 6) Engaging a "New Southward Policy" to integrate further with the economies in Southeast and South Asia.

Chow claimed that this might be a grand strategy for the Tsai-administration to globalize Taiwan's economy with substantial political dividends in the international community (Chow, P. C.Y. (2016).

Another challenge the Taiwanese government and society has to face is the corruption. According to GAN (2016) corruption does not represent a major obstacle for business operating or planning to invest in Taiwan, but, there are several reports of official corruption. These can be traced back to the close ties between politics and business which have raised the risks of corruption particularly in public procurement. Petty corruption, however, is very uncommon in most sectors. Taiwanese anti-corruption law is primarily contained in the Anti-Corruption Act, the Criminal Code and the Organic Statute for Anti-Corruption Administration and the government generally implemented these laws effectively. Taiwan's Agency Against Corruption defines low-level gratuities; therefore, any facilitation payment could be viewed as a bribe by the courts (Taiwan Corruption Report, GAN 2016).

According to Transparency International, in 2016 Taiwan ranked at No 31 in the world list, which is slightly worse than in 2015, but an improvement comparing to the preceding several years can still be seen on Figure 4.

In close relationship with all this, in Taiwan a new idea and well-functioning solution was found out to combat against tax evasion, at least in retail trade. In an effort to get merchants to keep things on the books, the Taiwanese government introduced a sweepstake, called Receipt Lottery. The theory being, with millions in winnings on the line, customers would start demanding receipts with every purchase and merchants would wind up with all their income on the books. Each receipt gets a unique eight-digit number stamped on it. On the 25th of every odd month they announce six winning numbers. People who collect their receipts, check their receipt numbers from the preceding two months (Receipt Lottery).

This author believes that this is a classic win-win situation. The customers, who have a real chance to win, are strongly interested to claim receipts even after their small shopping, as the highest prize is 10 million TWD (around 330,000 USD), but even minor prizes are still attractive. In the other hand both the government and the community wins, as the total

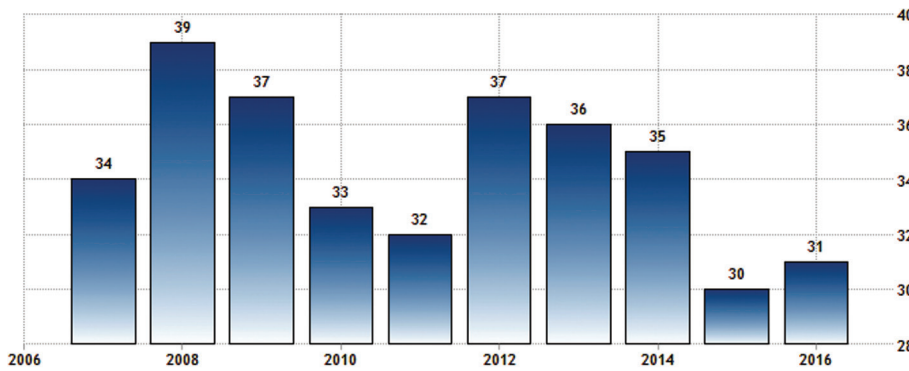


Figure 4: Taiwan's Corruption Rank
 Source: *Trading and Economics (Transparency International)*

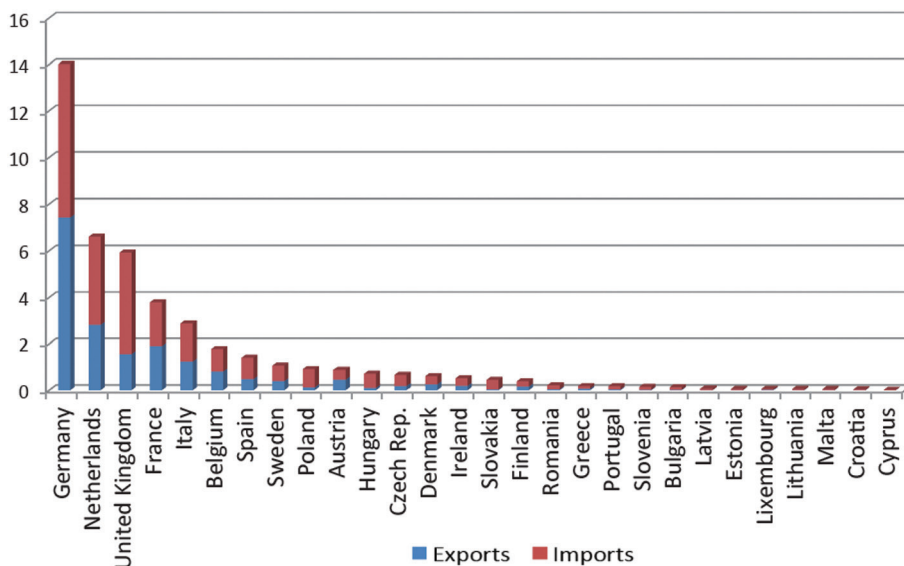


Figure 5: Bilateral trade between the 28 EU Member States and Taiwan in 2015 (EUR, billion)

Source: *EU-Taiwan Factfile, 2016 (on the basis of EUROSTAT data)*

sum of prizes remains far below the surplus the budget receives from taxes like this, even though the VAT ratio is much lower in Taiwan (5%) than in most European countries. This system works well, with bimonthly draw, and people follow the results with keen attention while VAT and all additional payments arrive to the budget.

ECONOMIC RELATIONS BETWEEN TAIWAN AND THE EUROPEAN UNION

Bilateral trade relations between the EU and Taiwan are in general good and expanding. According to statistical figures of 2015 Taiwan is the EU's 18th trading partner and the 7th in Asia in value of goods 44 billion EUR traded in 2015 (9.4% increase comparing to 2014). The EU is Taiwan's 5th trading partner, after China, the ASEAN block, US and Japan. The EU-Taiwan bilateral trade accounted for 1.3% of EU's world trade 2015. The EU's exports to Taiwan (18.5 billion EUR) grew in 2015 by 9%. Total trade in services between the EU and Taiwan was 7 billion EUR in 2014, with a shrinking surplus for the EU (1.3 billion EUR). ICT products dominate Taiwanese exports to the EU (35%), followed by machinery (17%) and transport equipment (11%). The share of Taiwan in integrated circuits and electronic components in EU's imports

worldwide is more than 15%. Machinery is the main export of the EU to Taiwan (23%); transport equipment takes also a significant part of EU's exports to Taiwan (18%), followed by ICT products (9%), pharmaceuticals (8%) and agri-food (7%). With a stock of FDI of 10 billion EUR, the EU is the largest investor in Taiwan. The EU's FDI accounts for 25% of all foreign investment in the island. At the same time, Taiwanese investment in the EU remains at a very low level (stock of 1 billion EUR). The EU as a whole only accounts for 2% of the stock of Taiwanese FDI. The inclusion of Taiwan in the European Commission's "Trade for All" trade communication, adopted in October 2015 is a major development. The prospect of a bilateral investment agreement (BIA) is an opportunity to create an overall better business environment in Taiwan for EU investment (EU – Taiwan Factfile, 2016).

Regarding the issue of the EU – Taiwan BIA, in spite of the recently mentioned optimistic consideration of the EU-Taiwan Factfile (2016), the state of this agreement does not look bright. The author need to recall Füle (2017) who pointed out that it has no reality until such an agreement between the EU and mainland China has been concluded (which is very unlikely).

From the European Union's side, such an agreement with Taiwan would collide with the One-China Policy (Füle, J. 2017).

In 2015, the European Union continued its intense and well-structured dialogue on economic and trade matters with Taiwan. Four technical expert-level working-groups, that meet twice a year, deal with questions related to sanitary and phyto-sanitary rules (including food safety), technical barriers to trade, automotive (including standards, certification and testing requirements), intellectual property rights, pharmaceuticals, cosmetics and medical devices. Ad hoc regulatory dialogues are held on government procurement, customs, telecom, complemented by seminars and workshops on issues of mutual interest, organised jointly by the European Economic and Trade Office (EETO) and Taiwanese stakeholders aimed at strengthening our cooperation. At the joint events, European experts from European Commission, EU Member States, industry and academia share best practices and advocate international and EU regulatory principles. The first Industrial Policy Dialogue took place in June 2015, which focused on innovation through digitalisation, standardisation and SMEs internationalisation and clusters cooperation, notably in the framework of the Enterprise Europe Network, of which Taiwan became a member on 28th May, 2015. The aggregated figures of trade

Table 5: EU's trade in goods with Taiwan

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
EU's exports (EUR billion)	12.9	13.0	13.2	13.3	11.6	10.0	14.8	16.2	15.8	16.5	17.0	18.5
Annual growth rate (%)	16.8	1.2	1.3	0.8	-13.0	-13.5	47.5	9.7	-2.4	4.1	2.9	8.8
EU's imports (EUR billion)	24.0	24.2	26.8	26.1	24.2	17.9	24.3	24.3	22.6	22.1	23.2	25.5
Annual growth rate (%)	5.6	0.8	10.8	-2.5	-7.5	-25.7	35.2	0.2	-6.8	-2.3	4.9	9.8
Total (EUR billion)	36.9	37.2	40.0	39.4	35.8	28.0	39.0	40.5	38.5	38.6	40.2	43.9
Annual growth rate (%)	9.3	1.0	7.5	-1.4	-9.4	-21.8	39.6	3.8	-5.1	0.4	4.1	9.4
Balance for the EU (EUR billion)	-11.1	-11.1	-13.6	-12.8	-12.6	-7.9	-9.5	-8.1	-6.8	-5.6	-6.2	-7.0

Source: EU-Taiwan Factfile, 2016 (on the basis of EUROSTAT data)

between the European Union and Taiwan can be seen in Table 5, while the bilateral trade between the 28 EU member-states and Taiwan (in 2015) can be seen in Figure 5. In the latter, it can be clearly seen that Germany is the biggest economic partner for Taiwan from among the 28 member states, covering 31.9% of the total EU-Taiwan trade turnover. The second biggest partner is the Netherlands (15.0%), the third one is the United Kingdom (13.5%), France (8.6%), Italy (6.5%), Belgium (4.1%) and Spain (3.2%) are still significant (EU – Taiwan Factfile, 2016).

CONCLUSION

Following the objectives of the study, on the basis of bibliographic sources and databases, furthermore incorporating all relevant information the author gained by personal interviews in Taiwan, as primary research results during his fellowship in 2017, the main findings and conclusions can be summarized as follows.

1) The Taiwanese model – similarities and differences between the development of South Korea

To answer the question – *whether Taiwan just followed the successful model of Japan and implemented the same economic policy instruments like other newly industrializing economies in Asia, or it had a special Taiwanese way* – the author made a comparison between Taiwan and South Korea in terms of several economic and non-economic factors.

In this respect there are many similarities, the most prominent ones are as follows:

- relatively small land, with significant population,
- scarcity of natural resources, especially energy carriers,
- colonial past,
- underdeveloped economy after the colonial period which was further devastated by the war(s) – WWII, and in case of South Korea, the Korean War (1950-53),
- strong (dictatorial) political leadership until the late 1980's,
- export-oriented economic development policy,
- American economic assistance helped the recovery and the take-off,
- Following Japanese and American patterns,
- Conflicts and continuous tensions in the direct geographic neighbourhood,
- High savings ratio, especially during the take-off period (1970's),

– Democratization process from the late 1980's

In the other hand, there were significant differences in the way of South Korea and Taiwan as follows:

- The role of state (government) in guiding the economic development was strong in both cases while in South Korea the government monopolized the credit allocations giving preference to the selected big export-oriented companies (which became the *chaebols*), while in Taiwan the interfering role of state was not that strong, mostly family-owned SMEs led the economic development.
- We may say, South Korea followed the *chaebol-model*, while Taiwan the *successful SME model*. However, what is more important difference, that in South Korea the success of the selected companies was *pre-decided* by the government, while in Taiwan *self-made* companies became successful. (Even though some of these SMEs grew big, they are still not giants like most of the well-known South Korean firms).
- The post-colonial heritage was quite different after Japan surrendered in 1945. Even though Japan had invested a lot both to Korea and Taiwan (as they both used to be provinces of Japan), in case of Korea the relatively modern Japanese investments and production capacities were in the North, they remained at North Korea. Those few capacities existed in the South were mostly devastated by the Korean War while in Taiwan production- and export-oriented capacities were not that much damaged, so Taiwan still had a stronger basis to start again from. Hence, even though the post-colonial and post-war situation devastated both economies, at the beginning the situation in South Korea was much worse (even in 1960 South Korea was one of the poorest country in the world), than in Taiwan where the situation was not so critical.
- Due to the previous factors Taiwan had higher per capita GDP (PPP) from the beginning than South Korea and this trend has still been continuing.
- The role and activity of the labour unions (In South Korea labour unions are strong, while in Taiwan they are still in a weak position).
- The R&D activity is concentrated to big corporations in South Korea while in Taiwan it is more spread. While in both economies the R&D activity used to be industry-specific from the take-off period, from the 1980's in South Korea it was shifted to the promotion of functional policies,

while Taiwan went on selecting and promoting industries of strategic importance with more explicit criteria.

- The outbound FDI in case of Taiwan is much higher (in ratio of GDP), it is around 50%, while in South Korea it is considerably lower.
- The role and activity in the international community. While South Korea is a widely accepted and recognized, independent member of the international community, Taiwan remains in the shade of mainland China in diplomatic isolation. Therefore, South Korea could join all those international agreements which it found beneficial (like FTAs), while Taiwan's possibilities are strongly limited.

After all the author considers that besides the obvious similarities, there were too many differences between the Taiwanese and the South Korean model that it can be claimed that Taiwan had its peculiar way of development, it did not copy or follow strictly any other patterns.

2) Economic and social challenges of Taiwan nowadays

- According to the author's experiences, and also the widely available, up-to-date bibliographic sources it seems that one of the main dilemmas is for Taiwan how to manage its economic relationship and the 'political contacts' with mainland China, in order to preserve its competitiveness and relative freedom (the *de facto* independence) while from some points it looks that mainland China and Taiwan seem to merge into a peculiar free trade zone.
- Taiwan invested much, one may say too much FDI into mainland China, which makes her economy and *de facto* independence even more vulnerable. Moreover, it contributes to mainland China's competitiveness only if Taiwanese companies went to the mainland to benefit from the lower labour costs there. It will not help to generate more jobs and it would not give any impetus to increase the salary level in Taiwan which is one of the main obstacles that hinders the growth of the domestic consumption and the economic growth.
- The author found that in spite of the geographic and cultural distance there are some points and phenomena, in which Taiwan and Hungary have similar experiences and challenges. One of these ones is the already mentioned salary stagnation, which hit Taiwan and also Hungary, where the salary level has still been retarded, comparing to other European countries, even most of the neighbouring states. Taiwan's (and other ANIEs') example clearly shows the fact that the low salary level cannot be a helpful competitive advantage for too long time. Definitely it helped the economic growth during the "take-off" period, but after a time it will be a constraint to catch up. (There must be different factors, like innovation, more R&D-intensive industries to generate more value added). Otherwise, there will always be more competitive economies which invest more to the domestic R&D and innovation and in longer run such countries will be able to pay higher salaries. Taiwan should follow this way. In the other hand, there will always be another place in the world – like mainland China – where the salary levels are lower, but to deploy manufacturing indus-

tries in a bigger extent to such places, it too risky. It has a reason why, for example, the new president of the United States campaigned and strived for bringing back the production capacities of American companies which went long ago abroad to benefit from lower wages, furthermore – due to such considerations – he withdrew the United States from the Trans-Pacific Partnership (Bradner, E. 2017).

- The author believes that – very similarly to Hungary, – the salary stagnation has been a very timely issue in Taiwan for the recent decade as well. In this respect, another similarity has to be pointed out between Taiwan and Hungary: the weak role and activity of labour unions. This is also one reason why the salary level could not catch up, even though Taiwanese or even the Hungarian economic performance would enable significantly higher salaries by now.
- In case of Hungary – thanks to the free movement of labour within the European Union, – several hundred thousand Hungarians have migrated to other European and overseas countries with the view of finding better livelihood. As a result of this process there is a massive shortage in various professions from medical doctors to skilled workers. This finally gave an impetus to the government to start tackling on the salary issue, while labour unions still not too active in this matter.
- The case of Taiwan is different a bit, young Taiwanese people who study abroad, remain there for a better job, and do not return. In some specific professions (like the mentioned semiconductor industry), brain-drain strongly exists and can even be accelerated if the government does not make sufficient efforts in this field. Till Taiwanese companies prefer keeping their manufacturing units in mainland China, the Taiwanese wages will not grow. If this stagnation continues, it will have adverse impact to the economy and will be a hard constraint of the future development.
- As a successful solution, the adaption and implementation of the mentioned Receipt Lottery system can be highly recommended in Hungary or any other European country where governments combatting with VAT evasion.

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