Crisis Management and the Changing Role of the State

University of Szeged Faculty of Economics and Business Administration
Doctoral School in Economics, 2014

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Edited by:
Éva Voszka – Gábor Dávid Kiss

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Editors:
Éva Voszka
Gábor Dávid Kiss

Copy editor:
Gábor Dávid Kiss

Reviewers:
Katalin Botos
Piotr Kozarzewski
Sarolta Somosi
Anita Pelle
Beáta Udvari

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Contributors

Augustynowicz, Paweł PhD student, Maria Curie-Skłodowska University in Lublin, Doctoral School in Economics.

Bnayat, Assil PhD student, Warsaw School of Economics, Doctoral School in Economics.

Csata, Andrea assistant lecturer, Sapientia Hungarian University of Transylvania.

Czékus, Ábel PhD student, University of Szeged, Doctoral School in Economics.

Dombi, Judit PhD student, University of Szeged, Doctoral School in Economics.

Elekes, Zoltán PhD student, University of Szeged, Doctoral School in Economics.

Karaś, Małgorzata PhD student, Warsaw School of Economics, Doctoral School in Economics.

Karpowicz, Andrzej PhD student, Warsaw School of Economics, Doctoral School in Economics.

Kazár, Klára PhD student, University of Szeged, Doctoral School in Economics.

Kerényi, Ádám PhD student, University of Szeged, Doctoral School in Economics.

Kovács, Zsuzsanna PhD student, University of Szeged, Doctoral School in Economics.

Kwiatkowski, Grzegorz PhD student, Maria Curie-Skłodowska University in Lublin, Doctoral School in Economics.

Pikler, Bálint Valentin PhD student, Kaposvár University, Doctoral School in Economics.

Végh, Marcell Zoltán PhD student, University of Szeged, Doctoral School in Economics.

Preface

This volume has been prepared by the Doctoral School in Economics at the Faculty of Economics and Business Administration at the University of Szeged on the occasion of the 2nd Central European PhD Workshop on Economic Policy and Crisis Management, with the title “Crisis Management and the Changing Role of the State”. The volume provides a review of selected papers presented at the PhD Workshop.

The Doctoral School in Economics at the University of Szeged aims at organizing a series of PhD workshops for Central-European doctoral schools. The workshop offers specific training and provides opportunity for interaction amongst senior and young researchers in line with the research activity of the doctoral schools on the field of finance and economic policy.

The first part of the volume is dealing with banking and macro policies. It consists of six articles highlighting the role of macro-prudential policy, monetary policy objectives, Islamic banking, fiscal austerity, taxation and economic integration. The second part puts state owned enterprises and renewable energy in focus.

We are grateful to Katalin Botos and Piotr Kozarzewski giving plenary session and chairing the session of the PhD workshop, to the reviewers, Sarolta Somosi, Anita Pelle, Beáta Udvari for their contribution to the realization of the volume.

2014, Szeged, Hungary

Editors

Part one:
Banking and Macro Policy

Voszka, É. – Kiss, G. D. (eds) 2014: *Crisis Management and the Changing Role of the State.* University of Szeged Doctoral School in Economics, Szeged, pp. 13-31.

1. Macro-prudential policy versus asset price bubbles in monetary union member states – The case of Spain

Małgorzata Karaś

The paper considers the ability of macro-prudential instruments – top-down regulations applied on the financial system as a whole, aimed at slowing credit growth and decreasing systemic risk – to flatten a growing asset price bubble in a country not having independent monetary policy. This is problem is analyzed from the perspective of Spain – a eurozone member state, for which the common monetary policy turned out to be expansionary, and which introduced a macro-prudential tool, dynamic provisioning, in the previous decade. The paper analyses the factors that influenced the emergence of the bubble of the Spanish real estate market in the previous decade. It takes into account demand and supply factors, as well as discusses the ECB's monetary policy in the context of Spain. Finally, it provides an overview of dynamic provisioning, the Spanish macro-prudential tool.

Keywords: Dynamic provisioning, macroprudential tools, monetary union

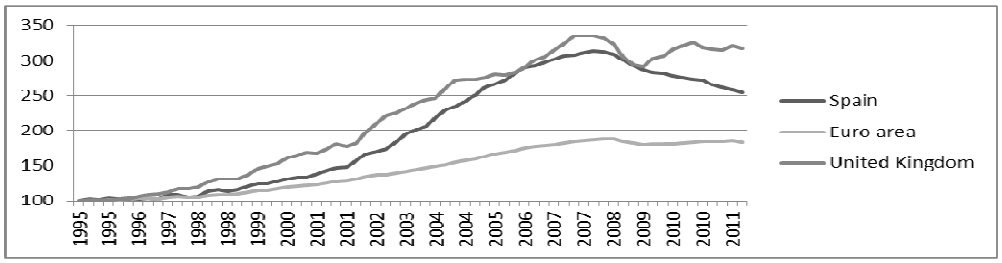
1. Introduction

Towards the end of the first decade of the XXI century, Spain, just like many countries around the world went through a severe financial crisis, preceded by a bubble on the real estate market and turmoil on the credit market. The nominal interest rates on new mortgage loans reached as low levels as 3-4% in the years 2003-5, which represented a radical decline from about 15% in early 1990, while the average maturity of mortgage loans in Spain increased from 10 to 28 years between 1990 and 2007 (Garcia-Herrero–de Lis 2008, Garriga 2010). The property prices multiplied by over 2 from the mid-1990s to 2004 and by 3 in the period 1995-2007. These multipliers for the whole euro area altogether are significantly lower: 1.5 and 1.8, respectively – the increase in property prices in Spain was significantly higher than, for example, in the United States.[1] In fact, the cumulative growth of house prices in

[1] As Garriga (2010) puts it, the housing boom in Spain makes the boom in the United States appear small.

Spain was among the highest in the OECD (Garriga 2010, Salmon 2010). As research shows (Fernandez-Kranz–Hon 2006, Caruana 2005), property prices' increase in Spain was far beyond the long-term equilibrium, which makes it fulfil the criteria for a bubble (Kim–Suh 1993, Gallin 2003).

Figure 1. House prices in Spain, the United Kingdom, and the euro area, 1995=100[2]



Source: ECB, UK National Statistics

Looking at the severance of the bubble in Spain, it seems necessary to pose a question: what specific factors on the supply, demand, and policy side might have contributed to the situation?

2. Monetary policy

The European Monetary Union has always consisted of separate, independent states, with a different level of development. According to numerous studies from the late 90's. (Flaig–Wollmersgaeuser 2007), mobility of labour in the countries about to form the Eurozone was low, real wages – rigid downward, shocks – distributed asymmetrically among countries, inflation – varied[3], to a level not explainable by

[2] 1995 was chosen as the starting date of the chart because reference to house prices in 1995 is the most common in literature.

[3] For those reasons, EMU creation was a controversial concept from the economics' perspective since its beginnings. As argued by many, for example Charles Wyplosz (2006), it was led by the political need, rather than well grounded in economic research. The whole process of eurozone creation, traced back by Bień (1988) as far back as to the Treaty of Rome signed in 1957, rested on Germany's willingness to give up the Deutsche Mark (Wyplosz 2006) and, consequently, was strongly influenced by particular political interests at each stage (Bień 1998). On one hand, it can be argued that that the optimal currency area theory was not entirely operational at the time of eurozone creation, and varied creation criteria were favoured by different researchers (e.g. mobility of capital and labour emphasized by Mundell (1961), strong trade within OCA favoured by McKinnon (1963), diversification of the region's economy emphasized by Kenen (1969). However, as argued by Wyplosz (2006), economic

the Balassa-Samuelson effect.[4] These reasons posed significant risks to the introduction of a single monetary policy regime: as suggested by Balcerowicz (2012) it could turn out to be inadequate to a country's fundamentals, either periodically ("temporal aspect", important for countries with business cycles imperfectly synchronized with the "average" business cycle of the euro zone to which the European Central Bank's rate correspond[5]) or structurally ("structural aspect", in countries with a different natural interest rate level[6]). There is broad empirical research which focuses on differences between the ECB's monetary policy and optimal monetary policy from the perspective of respective countries.

One of econometric analyses of inadequacy of the European Central Bank's monetary policy to the needs of euro zone countries is presented in a paper by Flaig and Wollmersgaeuser (2007). As a measure of divergence tendencies in the euro zone they used the stress (Clarida et al. 1998) – difference between the Eurozone's short-term interest rate and the interest rate that would be adopted by each country if it followed the "optimal monetary policy", approximated by its central bank's policy in the pre-euro era. They found that in the case of Germany the stress indicator remained close to zero during the whole period (which implies that the ECB continued the policy of the German Bundesbank for the whole euro area[7]). At the same time, for most euro zone countries interest rates were too low in the period of 1999-2005 by 1-2 percentage points. The ECB monetary policy was especially expansionary for Greece, Spain, Italy, France, and Ireland before 2003 (Figure 2).

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logic was clearly given lower priority than political reasons in this process, as the basic criteria of OCA creation that most researches agree upon, such as strong mobility of production factors and same inflation and output growth rates (Bień 1998, p. 164.), were not fulfilled.

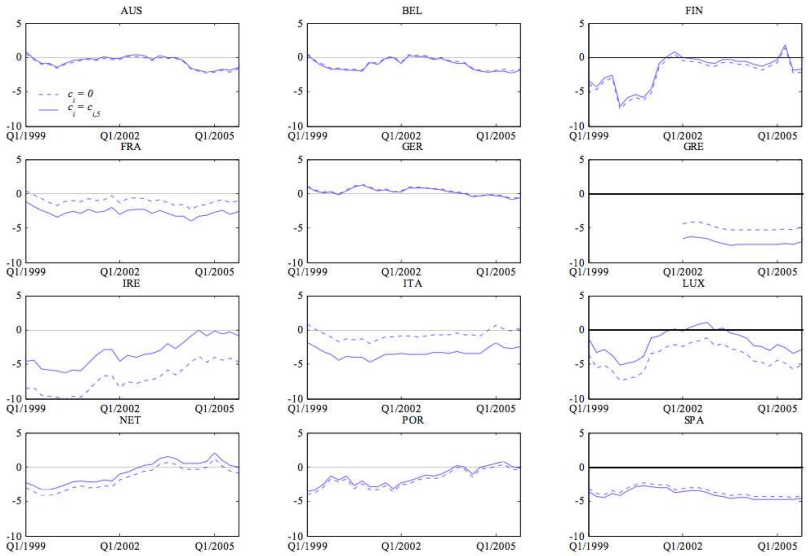
[4] Significant differences in inflation among EU countries could only partially be explained by the Balassa-Samuelson effect (Balassa 1964, Samuelson 1964), that is the process of real convergence of lower income countries within the currency area (significant productivity growth in the tradable sector of these countries translating into higher real wages in both tradable and non-tradable sectors and consequent higher inflation). Recent empirical evidence suggests that the Balassa-Samuelson effect does not suffice as an explanation of persistent inflation in the EMU (Rogers 2007).

[5] There was no wide consensus regarding whether national business cycles would become more synchronized after the union creation (intensification of international trade could synchronize economic activities, so optimality of a currency area could emerge after a monetary union launch in countries that did not form one ex ante; Frankel–Rose 1998) or less synchronized due to higher specialization in the union and impact of sector specific shocks (Krugman 1993).

[6] Wicksell's (1936) concept of an interest rate compatible with output being at its potential and stationary growth.

[7] It is worth to note that this fact can be partly justified by Germany's contribution to the euro area's economy: Germany's GDP has ranged between 28% and 33% of euro area's GDP (calculations based on Eurostat's data).

Figure 2. Country-specific stress for Eurozone member countries, 1999-2005



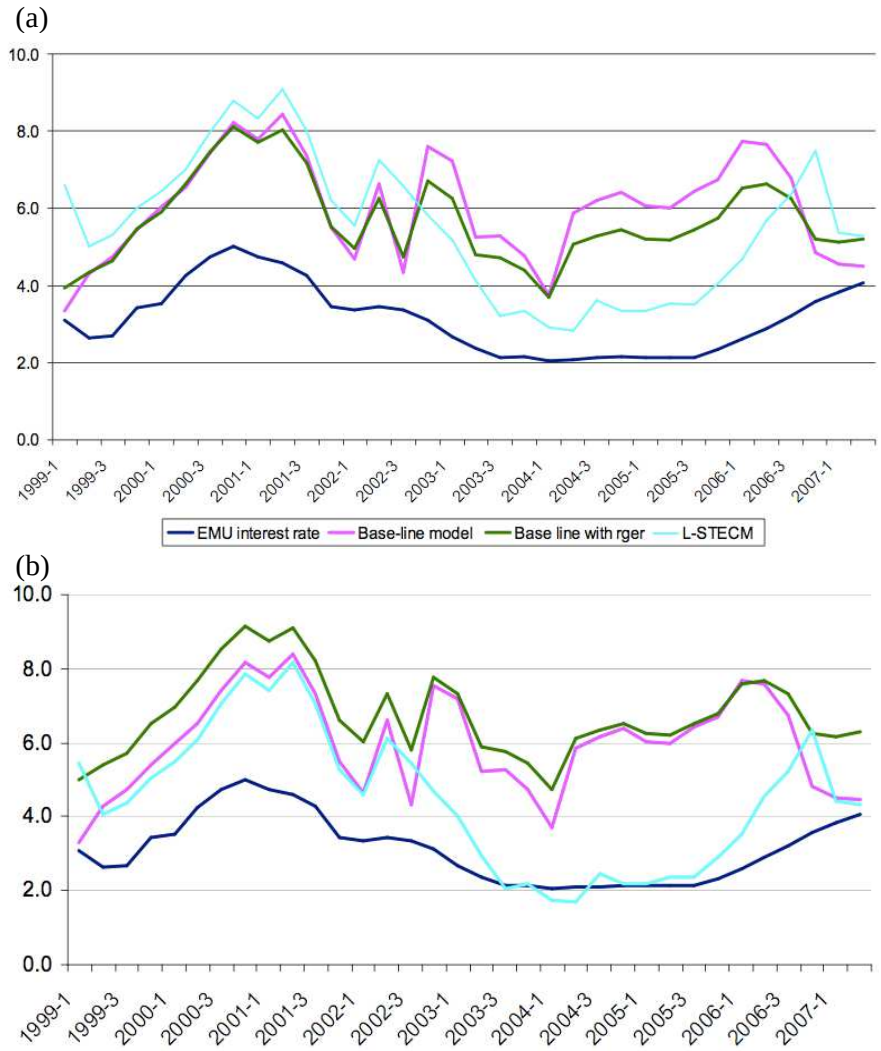
Source: Flaig and Wollmersgaeuser (2007)

A similar analysis devoted exclusively to Spain was performed by Arghyrou and Gadea (2008, Figure 3). They modelled Spanish monetary policy before the euro-accession (1980-1998), then forecasted the interest rates which the Bank of Spain would have set after 1999 if it had been independent, and finally used the differences between the forecast and actual ECB rates as a measure of compatibility between the single monetary policy regime and fundamentals of the Spanish economy. They found that after 1999 the Bank of Spain would have set nominal interest rates twice as high as those set by the European Central Bank.

Arghyrou (2008) published a similar analysis devoted to Greece and found that the ECB's monetary policy also seemed too loose (and "incompatible with the Greek economic conditions"). Hayo and Hofmann's (2006) research suggests that German interest rates would have been similar to those of the ECB under a hypothetical Bundesbank regime after 1999.

Similar conclusions to those mentioned above can be drawn from a comparison of the ECB monetary policy with the level of interest rates suggested for each euro-zone country by the Taylor rule. Caruana (2005) analysed the period of 2004-2005 and found that the ECB's monetary policy was then expansionary for Spain and Greece (Figure 4).

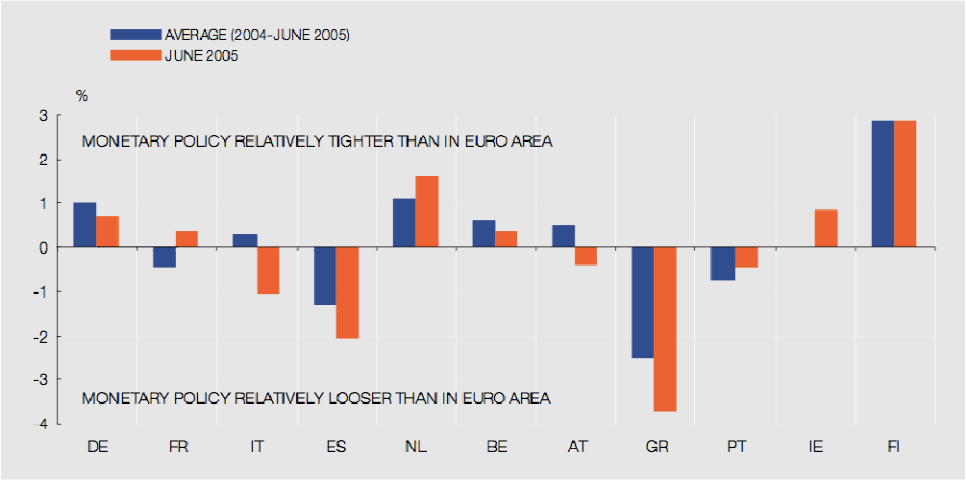
Figure 3. Comparison between nominal interest rate set by the ECB and three models of the Bank of Spain's rate



Note: If it had remained autonomous and continued its policy from the period 1980-1998. Two variants: panel (a) not taking into account credibility gains caused by euro zone accession (b) with those included in the model

Source: Arghyrou and Gadea (2008)

Figure 4. Deviations of interest rates in the Eurozone from the Taylor rule in 2004-2005. Weights of 1.5 (inflation's deviation from target) and 0.5 (output gap), natural interest rate of 2%, inflation target of 2%, inflation index excluding energy and unprocessed foods



Source: Caruana (2005)

Clearly, therefore, Spain seems to be an example of incompatibility between the single monetary policy regime and a country's macroeconomic fundamentals: from Spain's perspective, the ECB's monetary policy was expansionary. As argued in Karaś (2013) and demonstrated by a number of empirical analyses (e.g. Jarociński–Smets 2008, Taylor 2010, Ahrend et al. 2008), loose monetary policy can contribute to the emergence of an asset price bubble, for example a bubble on a real estate market.

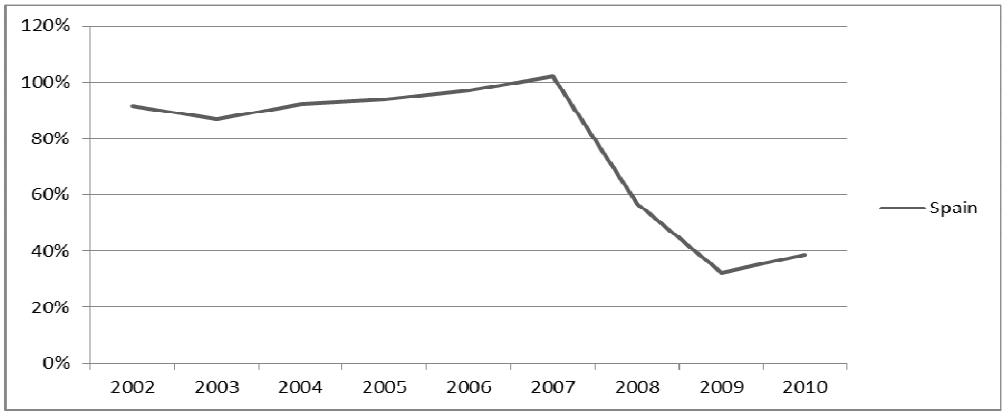
3. Demand factors on the Spanish property market

The factors that drove the demand on the Spanish real estate market in the previous decade can be broadly classified according to two dimensions: the first division separates fundamental demand factors from those related to the ease of financing housing, while the second one separates policy from non-policy factors.

Purely demand, non-policy factors include demography, immigration, and culture. Spain is a high owner-occupation, low private rental country: only about

13% houses in Spain are privately rented[8] (Maclennan 2000). It experienced a giant inflow of immigrants in the last decade: the significant increase in population (over 15% of growth between 2000 and 2011) was largely due to immigration. The net migration in Spain in the period 2002-2007 amounted to 87-102% of total population growth each year, with Eastern Europe, Latin America and North Africa being the most important contributors (Garriga 2010). The share of the foreign-born population in Spain was as of 2011 as high as 14%. The significant growth in population certainly increased demand on the property market, but also affected the supply side (see later).

Figure 5. Net migration in Spain as a percentage of total population growth, 2002-2010

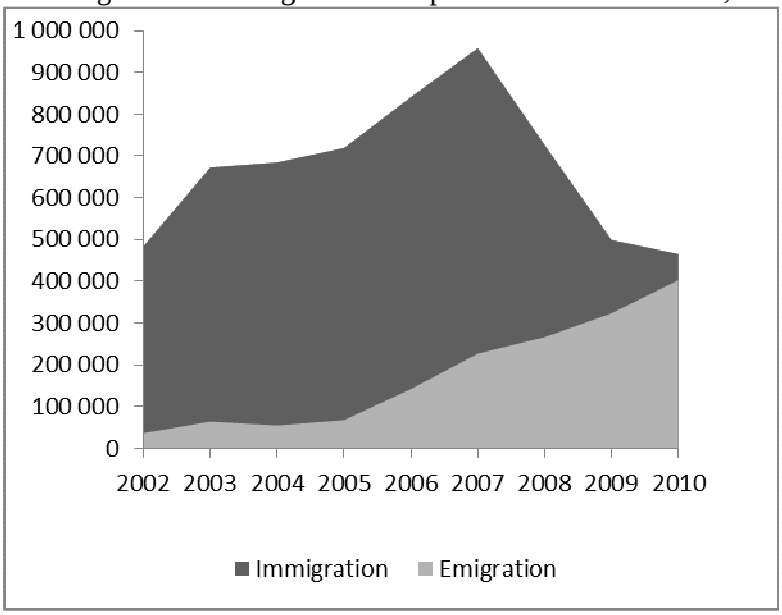


Source: Eurostat

It is worth noting that the inflow of immigrants to Spain was not only driven by the general economic growth of this country, which made it attractive for job-seekers from abroad. An important factor was also the growth of popularity of holiday houses – due to the Mediterranean climate – especially among foreigners, such as retired citizens of the UK and Northern Europe. It can be argued that this way – due to the less favourable climate of the United Kingdom – this country contributed to the Spanish real estate boom (Muellbauer 2007). Holiday homes were also popular among Spanish citizens, simultaneously because of the atmosphere of prosperity in Spain (Garriga 2010) and a wish to compensate for high density apartment living in cities (Salmon 2010).

[8] According to Maclennan et al. (2000), those countries owe it to their social democratic heritage.

Figure 6. Immigration and emigration for Spain in absolute numbers, 2002-2010



Source: Eurostat

Two more issues related to demography are worth noting. Firstly, Spain – unlike many other countries, e.g. Britain – experienced a baby boom in the 70's. (Figure 7, Caruana 2005, Garcia-Herrero–de Lis 2008), and that generation grew up and started to move out of their parents' homes in the last decade. Secondly, Spanish families' are known for their traditional preference for home ownership (Caruana 2005).

Based on the analysis above it seems that pure demand factors driving the boom, such as demography and immigration, were relatively strong in Spain.

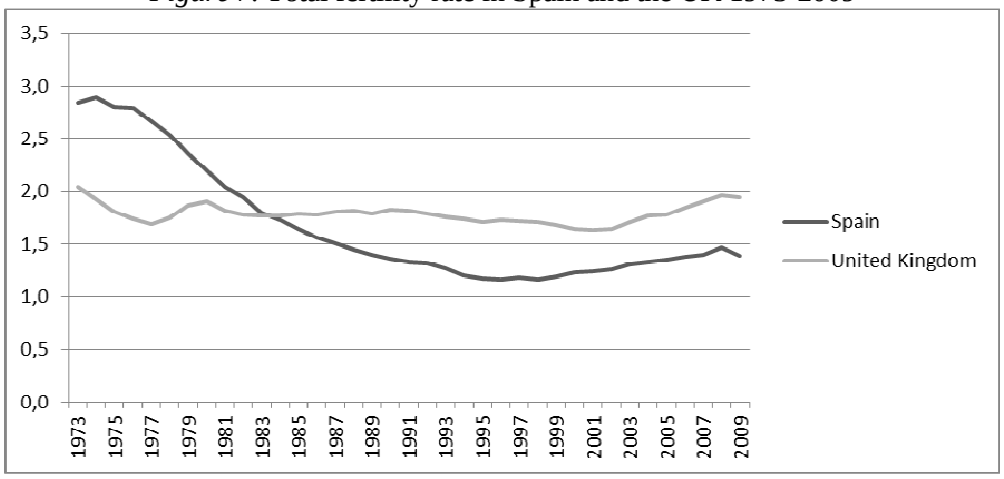
The second group of factors, purely demand policy-related factors, include fiscal policy related to housing. Intuitively, countries where tax treatment favours owner-occupied housing over tenant-occupied (for example tax credits from which, naturally, only house owners can benefit) seem to have a larger proportion of citizens in owner-occupied housing (Garriga 2010).[9] An example if such a country

[9] Such policy's fairness is disputable, as renters usually are the young and poor households. This is why Beynet et al. (2011) suggest replacing subsidizing ownership with targeted cash-transfers as a housing support for low-income households, especially that then demographic characteristics of the household could be taken into account.

clearly is Spain, which offered its inhabitants tax credits available for 15% of amortization and interest payments on mortgage debt, subject to an annual maximum. By strengthening the incentives of owning property, such a policy seems to have contributed to the boom on the Spanish market: a model by Lopez-Garcia (2004) predicts home prices lower by between 11% and 21%[10] had housing subsidies, implicit in the personal income tax, eliminated.

The increased popularity of owning real estate among households would not have created the boom without an adequate response from the banking sector. This is why the next issues driving the boom on the real estate market relate to the easy access to financing which Spanish society enjoyed in the previous decade.

Figure 7. Total fertility rate in Spain and the UK 1973-2009

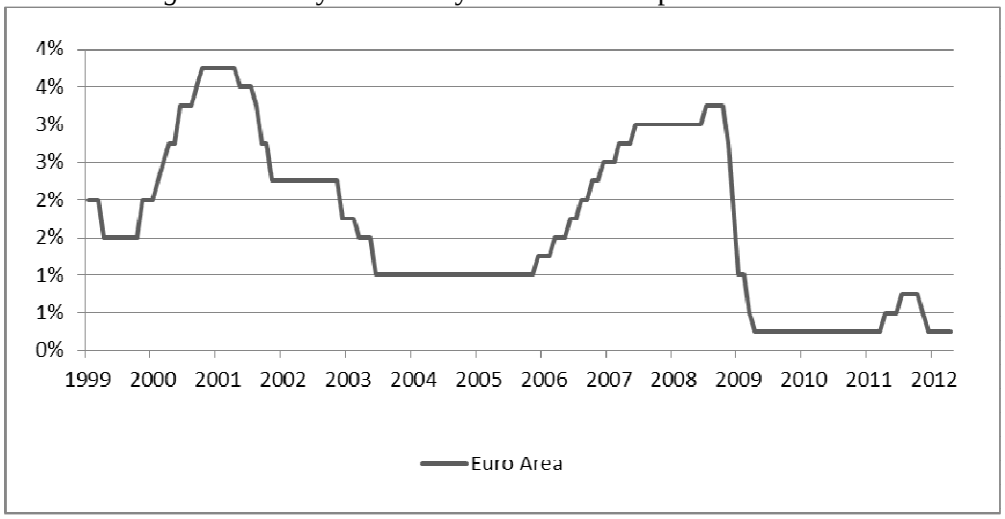


Source: Eurostat

The first group are policy-related factors related to the ease of receiving credit. The first factor here is the low central banks‘ interest rate, which has already been mentioned previously. The EMU accession increased the credibility of Spain and other peripheral economies, brought a consequent fall in the country risk premia (spreads between government bond yields of euro area countries narrowed to very low levels; Bini Smaghi 2011) and a sharp decline of real interest rates, which remained below 0 most of the time between 1999 and 2007 (Figures 8 and 9).

[10] Those numbers come from the version of the model with exogenous land prices. If land prices had also been estimated by the model, the difference would have been higher.

Figure 8. Policy rates set by the ECB in the period 1999-2012



Source: Eurostat

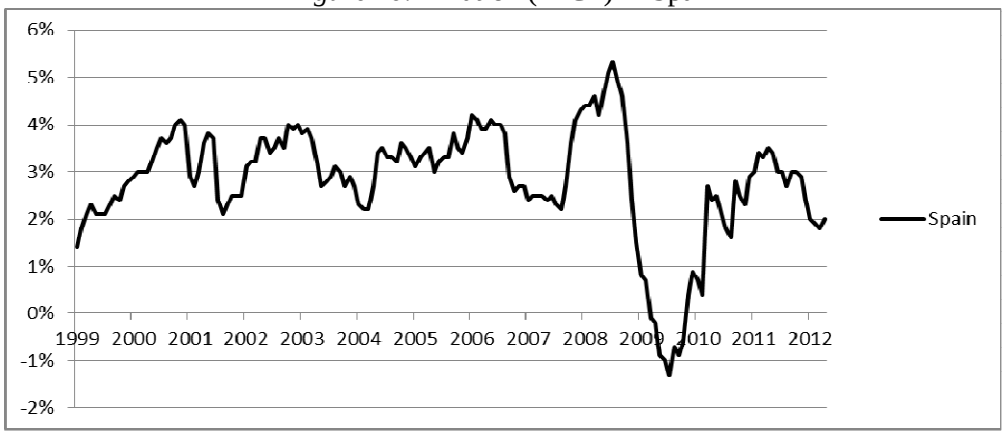
Figure 9. Ex-post real interest rates in Spain

Source: Eurostat

The general confidence in the future deepening of the EU single market, as well as in structural reforms to be adopted in peripheral countries, brought the expectation that their competitiveness and GDP growth should increase. This belief was shared by the financial markets, companies, and households. Financial markets were eager to lend to corporates and companies were eager to borrow, both groups

expecting high ROI. Households were interested in both increased consumption and housing loans, aiming for an increase in their living standards and believing in the appreciation of houses in the future (McQuinn–O'Reilly 2007). Those mechanisms led to a general boom in the Spanish economy. At the same time, the increased credibility of Spain and low short-term interest rates made it easy for banks to obtain financing on wholesale money markets.

Figure 10. Inflation (HICP) in Spain

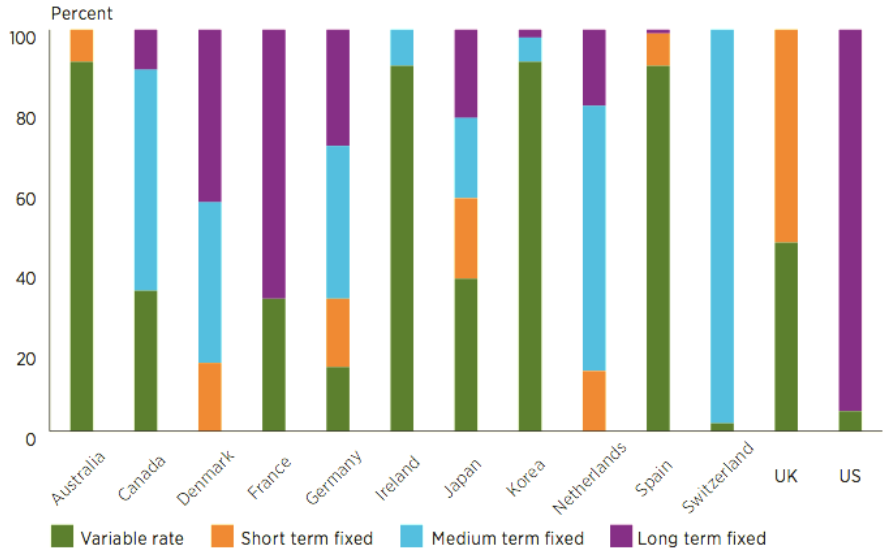


Source: Eurostat

Another factor are the developments of the market of credit instruments themselves. In Spain, no significant number of subprime loans was advanced (Salmon, 2010), and securitization was relatively limited there. The main reason for that was the conservative regulation of banks – ever since 2004, asset-backed securities transferred to SPV de facto still remained on their owners' balance sheets as only the consolidated balance sheets were assessed by supervisors. However, the vast majority (over 80%) of Spanish homeowners used adjustable rate mortgages (ARMs) to finance the purchase of a house[11], which made it easier to transfer the interest rate risk on customers (Figure 11).

[11] 98% according to Garcia-Herrero and de Lis (2008).

Figure 11. Mortgage product interest variability



Source: Lea (2010)

A factor affecting the boom which differentiates Spain from a number of different countries is the fact, that – having noticed the lending boom – the Bank of Spain introduced in 2000 the dynamic provisioning system which in practice penalized credit growth and could today be called a macro-prudential tool. It was adopted despite strong criticism from the Spanish banks who described it as worsening their position against foreign competitors (Garcia-Herrero–de Lis 2008). The two objectives of dynamic provisions were (Fernandez de Lis–Garcia-Herrero 2010):

- to slow down the credit growth by increasing the cost (in terms of provisioning effort) of granting new loans;
- to protect Spanish banks from future losses which are a natural consequence of the relaxation of lending standards during a boom.

The provisioning system after 2000 was to be based on three types of provisions: specific and generic (both existed before) and statistical (the new component). The first kind depended on current bad loans, the second was equal to 1% of the credit stock, and the third depended on credit growth and was designed to offset specific provisions (pro-cyclical since there are few non-performing loans during a boom; Fernandez de Lis–Garcia-Herrero 2010).

In the new provisioning system, bank assets were classified according to risk categories and assigned parameters, with a standard (with parameters ranking from 0% for public sector debt to 1.5% for credit card lending and current account overdrafts) or internally-developed method (subject to supervisory evaluation). Statistical provisions were then charged on a quarterly basis. They could be either positive or negative, depending on credit growth (with a positive coefficient) and contemporary bad loans (with a negative coefficient). Accumulated statistical provisions generated a fund, with an upper limit of 3 times the adequate coefficient times the exposure (Garcia-Herrero–de Lis 2008).

What is interesting to note is that the dynamic provisioning system was changed in 2004 – for a couple of reasons. The first one was the criticism from standard-setters of international accounting rules. They argued statistic provision was against the "fair value" principles of International Financial Reporting Standards and allowed profit smoothing along the cycle, masking the real situation of the banks. The second one was the significant increase of the sum of statistical provisions as the boom continued. Total provisions reached 2.5% of credit (with specific provisions reaching only 0.5% of credit), and the coverage of provisions over bad debt reached nearly 500% (Fernandez de Lis–Garcia-Herrero 2010). Those numbers were widely considered as too high, especially by the banks which again argued that the statistical provisions posed a disadvantage against competitors from abroad (Garcia-Herrero–de Lis 2008, Fernandez de Lis–Garcia-Herrero 2010).

The Bank of Spain responded to these arguments by merging statistic provisions with the generic provisions. The new generic provisions were counted using the following formula:

$$\textit{generic provision} = \alpha\, \Delta\, \textit{credit} + \beta\, \textit{credit} - \textit{specific provision}$$

where α and β values are presented in the Table 2. The upper limit of the Fund of the new generic provisions was reduced to between 0.33 and 1.25 times α times the exposure (Garcia-Herrero–de Lis 2008).

After the reform (especially as a consequence of the change of the upper limit of provisions) the ratio of provisions to credit decreased, from 2.5% in 2004 to 2.2% in 2007.

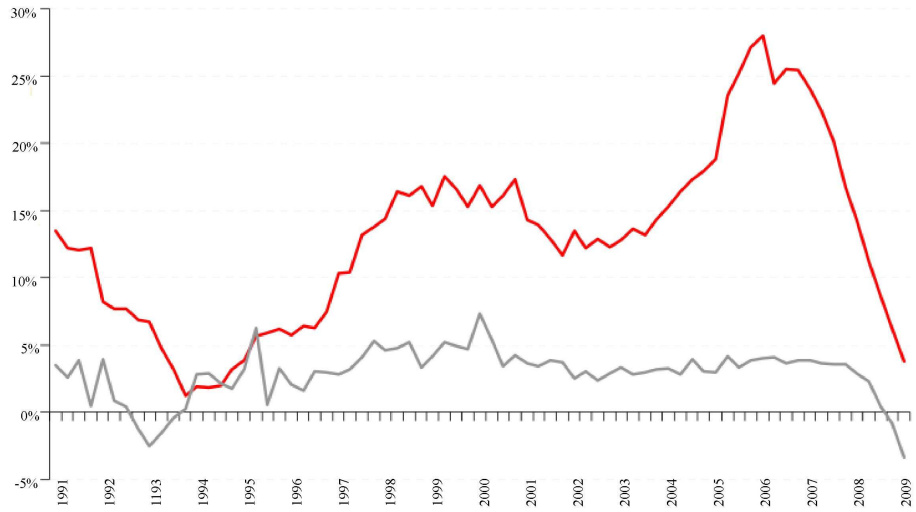
It is interesting to note that after the introduction of dynamic provisioning in 2000 the growth of credit stabilized around 15%, and then slightly decreased, which might have been – at least to a certain extent – due to both the provisions and the burst of the dot-com bubble. However, after 2004 – which coincided with the change in the provisioning system – credit accelerated sharply and reached rates of growth above 25% in 2006 (Figure 12).

Table 2. Coefficients applied to dynamic provisioning after the reform in 2004

Type of risk	**α**	**β**
No apparent risk	0%	0%
Low risk	0.6%	0.11%
Low-medium risk	1.5%	0.44%
Medium risk	1.8%	0.65%
Medium-high risk	2%	1.1%
High risk	2.5%	1.64%

Source: Fernandez de Lis–Garcia-Herrero (2010)

Figure 12. GDP growth (in light grey) and credit growth (in dark grey) in Spain, 1991-2009



Source: Fernandez de Lis and Garcia-Herrero (2010)

4. Supply's reaction on the Spanish property market

A couple of factors which drove the supply side of the real estate market in Spain should be noted.

The first one was the liberalization of constructible land in 1998 and 2003, which resulted in a 28% increase in the availability of land for construction (Garriga 2010). As before, land which was not zoned for housing could be bought at a fairly

low price. After the liberalization, this land could be easily transformed into constructible land via an administrative process. Already filing the application for the transformation pushed the land prices forward, let alone successful application. This is why it became popular to buy land, apply, and resell it at a substantial profit or develop real estate. This legal opportunity drove land prices[12], and generated profits for land owners, local authorities[13], and corrupted individuals involved in the approval process (Salmon 2010).

The second was the big reservoir of relatively low-cost labour, being both the unemployed (as the level of unemployment in Spain never fell below 8% of the active population; Salmon 2010) and the immigrants, that could be employed by this sector (Garriga 2010). As a result, employment in the construction industry rose from 1.2 million in 1996 (9.2% of the labour force) to 2.7 million (13.3% of the labour force) in 2007. Consequently in 2007 there were almost as many people employed in construction alone (excluding related activities) as there were in the whole industrial sector (Salmon 2010).

It should be emphasized, however, that clearly the Spanish housing boom was demand-driven. Despite the strong reaction on the supply's side, the real estate prices had grown explosively. As a result of increased supply of the two essential production factors, housing supply in Spain was able to grow very fast.

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[12] It might seem that counterintuitive that a liberalization led to a price increase. However, let us consider the following example:
There is a small country with 1000 km^2 of empty land, 500 km^2 constructible and 500 km^2 non-constructible. Constructible land is of higher value because it provides its owner with possibilities of making a high profit, for example via developing a block of flats and selling it. Let us, therefore, assume a price of km^2 of constructible land to be as high as 1000 monetary units, while a km^2 of non-constructible land is worth 200 monetary units. Then the law becomes liberalized and it is possible to transfer non-constructible land into constructible via an administrative process. Some people decide to buy non-constructible land and apply for a change of its properties. In the first round, 100 km^2 is transferred. There is now 600 km^2 of constructible land and 400 km^2 of non-constructible land available. The price of the initial 500 km^2 of constructible land decreases. The price of the left 400 km^2 of non-constructible land increases. The price of the 100 km^2 jumps from 200 units per km^2 to slightly less than 1000 units per km^2. As the two markets (of constructible and non-constructible land) slowly become one, the prices of the first type decrease and of the second type increase until they reach a new equilibrium.

[13] Their sources of income include taxes on property and property development – Property Tax, Tax on Buildings and Building Works, Tax on Increased Urban Land Value. Those together nearly reached 50% of their adjusted income (reduced by transfers and money markets) in 2005.

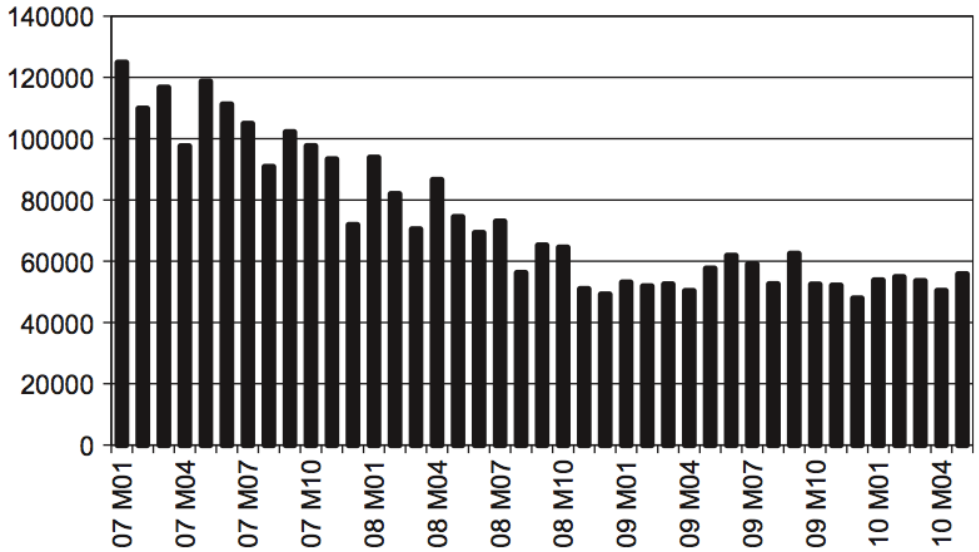
5. Bust in Spain

Slowdown on the Spanish real estate market started at the beginning of 2007 and intensified after the burst of the asset bubble in the United States in the summer of the same year. Garcia-Herrero and de Lis (2008) mention two important channels of contagion from the US to the rest of the world:

- funding liquidity dry-up and the closure of the wholesale money markets;
- direct exposure to subprime losses (negligible in the case of Spain, where subprime credits were not granted on a large scale and banks had not looked for investment opportunities abroad).

As a consequence, in February 2007, the number of new house mortgages granted in Spain was down by nearly 4%, in May – by 6%, and in October – by 12%, compared to the previous year. The pace of decline accelerated in 2008, with a 29% drop in May 2008 compared to May 2006, and a 42% decline in October 2008 compared to October 2006. In January 2009, the sum of mortgages granted fell by 58% from the equivalent number in January 2007 – and then stabilized (Salmon 2010, Figure 13).

Figure 13. Number of new urban house mortgages granted, Spain, 2007-2010



Source: Salmon (2010)

As a consequence of the liquidity crisis, decrease in lending, fall in the value of the banks' assets (both real estate and equity holdings), and increased level of bad debts, the central bank had to intervene to support banks.

In Spain *cajas* ("credit institutions with foundational origins and social objectives" with public representation in their governing bodies; Catalán–Moretti 2006) made up a half of the banking system. As the crisis hit, the Bank of Spain had to support two of them: it provided Caja de Ahorros de Castilla-La Mancha with temporary liquidity support in early 2009 and took into administration the Córdoba based 'CajaSur' in mid-2010. On the other hand, the soundest bank in the EU according to stress tests organized by the Committee of European Banking Supervisors (CEBS, now the European Banking Authority) in July 2010 was the Spanish Banca March (CEBS 2010).

6. Conclusions

The bubble which appeared on the Spanish real estate market in the early 2000s was influenced by a number of factors on the demand (demography, immigration, cultural factors, fiscal policy related to housing, credit market structure and regulations), supply (land regulations, immigration), and monetary policy side. In further research the relative strength of each of the factors should be evaluated in detail. In particular, in the light of discussion on macro-prudential tools introduction in developed economies (in the case of the EU introduced in 2014 by the Capital Requirements Directive IV) it is worth verifying how the dynamic provisioning introduction and reform influenced the market.

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2. Inflation targeting worldwide and in Hungary – A miracle or a disaster?

Ádám Kerényi

Inflation Targeting (IT) is one of the operational frameworks for monetary policy aimed at attaining price stability. Goodhart's (2009) law states that any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes. Central banks behave accordingly to their monetary regime, which all have policy goals. In recent decades, there has been widespread interest in shifting from a discretion-based to a rules-based monetary policy frameworks. The inflation targeting regime has a wide pro and critical professional literature. We all know, that inflation is a serious disease, but the role of the anti-inflatory policy is questioned by several economists, who advise that the monetary policies might focus on unemployment rate or the increase of GDP. The questions raised in my paper that: Is IT an exclusive monetary regime? Is IT the most successful equipment to reach price stability? Are the central banks the one and only responsible actors regarding the inflation rate? I am focusing in the second part of my paper to the Hungarian monetary policy regimes. Does price stability should be the ultimate goal for a monetary framework in Hungary? I think this paper is actual, because in Hungary there has been inflation targeting monetary framework since 2001 due to what I suppose the international financial crisis hit the country more severe than it should.

Keywords: inflation, monetary policy, central banking

1. Introduction

In recent decades, there has been widespread interest in shifting from a discretion-based to a rules-based monetary policy frameworks worldwide (see Benati-Goodhart 2008).

The inflation targeting (IT) regime was introduced to eliminate the inflation bias, very soon many countries have adopted that regime, meanwhile in Hungary János Kornai (1983) listed seven different main diseases[1] which attacks the wealth

[1]Inflation, unemployment, shortage, high level of external indebtedness, growth problems, inequality, bureaucratism.

of national economies. Among these diseases there are many trade-offs. In order to reduce the symptoms and complications of one disease, or even be successful in treating it, we are responsible for increase one other disease. There is no panacea. That is almost impossible to be full healthy, the non-healthy condition remains. Almost everyone agrees on that the inflation can be harmful[2] to the society[3], let me refer to that expressions: inflation is the tax of the poor's. The main reasons for the inflation are the imbalances between the actual supply and demand. "Inflation harms the economy via two interrelated channels. The level of inflation, on the one hand, and inflation uncertainty, i.e. erratic changes in prices, on the other, may induce costs, thereby reducing social welfare (Kiss–Krekó 2004, p. 7.)". If we analyze the global inflation between 1990 and 2013 (Table 1) we might think that the golden era of decreasing and reaching a constant low inflation has been arrived. In the economic history that is a unique process when the inflation went down so fast. Nevertheless this is only a precondition of sustainable price stability, because long-term price stability depends less and less on domestic monetary policy.

Table 1. Inflation, average consumer prices

Geo – time	**1980**	**1985**	**1990**	**1995**	**2000**	**2005**	**2010**	**2013**
World	17,9%	15,3%	27,7%	14,4%	4,6%	3,8%	3,6%	3,8%
Advanced economies	13,7%	5,4%	5,1%	2,6%	2,3%	2,3%	1,5%	1,4%
Euro area	n/a	n/a	n/a	2,4%	2,2%	2,2%	1,6%	1,5%
Major advanced economies (G7)	12,4%	3,8%	4,7%	2,2%	2,2%	2,4%	1,4%	1,3%
European Union	12,6%	6,1%	27,5%	5,0%	3,1%	2,3%	2,0%	1,7%
Emerging market and developing economies	n/a	n/a	98,7%	39,0%	8,6%	5,9%	5,9%	6,2%
Central and eastern Europe	27,5%	17,7%	140,4%	49,2%	29,3%	5,9%	5,3%	4,1%

Source: International Monetary Fund, World Economic Outlook Database, October 2013 downloaded: 2014-03-09

One of the Maastricht criteria states that the inflation rate is an annual reference period shall not exceed the greater of 1.5% of the average of the three Member States with the lowest inflation rate index. In comparison, if we look at how different inflation rates over the last eleven years from within the European Monetary Union (Table 2), we can see that the difference between the countries with the lowest

[2]But there are evidence only for its harm to the economy when the inflation is unexpected, double digit or higher.
[3]Every inflation is basically antisocial (Inotai 2011, p. 361.).

and the highest inflation rate is always higher than the 2,2%, resulting in a dramatic divergences in a decade.

Table 2. Inflation in the Euro area from 2002 to 2013

Geo - time	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Belgium	1,6	1,5	1,9	2,5	2,3	1,8	4,5	0,0	2,3	3,4	2,6	1,2
Germany	1,4	1,0	1,8	1,9	1,8	2,3	2,8	0,2	1,2	2,5	2,1	1,6
Estonia										5,1	4,2	3,2
Ireland	4,7	4,0	2,3	2,2	2,7	2,9	3,1	-1,7	-1,6	1,2	1,9	0,5
Greece	3,9	3,4	3,0	3,5	3,3	3,0	4,2	1,3	4,7	3,1	1,0	-0,9
Spain	3,6	3,1	3,1	3,4	3,6	2,8	4,1	-0,2	2,0	3,1	2,4	1,5
France	1,9	2,2	2,3	1,9	1,9	1,6	3,2	0,1	1,7	2,3	2,2	1,0
Italy	2,6	2,8	2,3	2,2	2,2	2,0	3,5	0,8	1,6	2,9	3,3	1,3
Cyprus							4,4	0,2	2,6	3,5	3,1	0,4
Luxembourg	2,1	2,5	3,2	3,8	3,0	2,7	4,1	0,0	2,8	3,7	2,9	1,7
Malta							4,7	1,8	2,0	2,5	3,2	1,0
Netherlands	3,9	2,2	1,4	1,5	1,7	1,6	2,2	1,0	0,9	2,5	2,8	2,6
Austria	1,7	1,3	2,0	2,1	1,7	2,2	3,2	0,4	1,7	3,6	2,6	2,1
Portugal	3,7	3,3	2,5	2,1	3,0	2,4	2,7	-0,9	1,4	3,6	2,8	0,4
Slovenia						3,8	5,5	0,9	2,1	2,1	2,8	1,9
Slovakia								0,9	0,7	4,1	3,7	1,5
United King	1,3	1,4	1,3	2,1	2,3	2,3	3,6	2,2	3,3	4,5	2,8	2,6
Iceland	5,3	1,4	2,3	1,4	4,6	3,6	12,8	16,3	7,5	4,2	6,0	4,1
Min	1,3	1,0	1,3	1,4	1,7	1,6	2,2	-1,7	-16	1,2	1,0	-0,9
Max	5,3	4,0	3,2	3,8	4,6	3,8	12,8	16,3	7,5	5,1	6,0	4,1
Difference	4,0	3,0	1,9	2,4	2,9	2,2	10,6	18,0	9,1	3,9	5,0	5,0

Source: Eurostat

2. Different goals, methods, frameworks

Over much of the 20th century macroeconomic stabilization was pursued through active discretionary monetary with a fixed exchange rate regime.

Disappointed with the excessive focus of economists in controlling business cycles, while neglecting the efficiency and growth, Milton Friedman (1948) was the

first to articulate a coherent framework of monetary and fiscal rules. Stated in its simplest form, his proposal called for a stable money supply calibrated only to accommodate actual government budget deficits or surpluses generated by a cyclically-balanced budget, which would of course allow for the operation of automatic stabilizers. Inspired by this proposal, rules-based macroeconomic policy frameworks have evolved in multiple ways to capture real-world needs and complexities of differing economic environments. In essence, a rules-based framework is commitment technology. Under such a framework, the fiscal or monetary authority is bound to pursue a predictable policy course, within certain numerical and qualitative constraints on a well-defined performance target, such as inflation, public debt, or budget balance. As commitment technology, the framework encompasses policy rules and procedures that link decision-making to the specified target. The linkages include institutional requirements and technical requirements. For instance, in the monetary area, inflation targeting is predicated on an effective transmission mechanism between the base interest rate and the inflation rate, possibly specified within a coherent macroeconomic model, which underlies inflation forecasts. In the fiscal area, policy rules must be supported by an orderly and transparent budget process. The latter provide the basis for reliable and unbiased short- to medium-term fiscal forecasts, as well as for long-term scenarios to ascertain public debt sustainability. A key element of the framework is a well-defined policy reaction function. The precise specification of the interest rate function (simply stated, as a function of the deviation of expected inflation from the target rate and of the output gap) used for inflation targeting is country-specific, yet within a broad pattern across countries (Kopits 2014).

When voters have three or more distinct alternatives Kenneth Arrow's paradox[4] states that no rank order voting system can convert the ranked preferences of individuals into a community-wide ranking while also meeting a specific set of criteria. Political decisions, if they are principled, rest on value judgments. Politicians and citizens participating in the political process must choose a position in the conflict between such ultimate values. Inflation is a monetary syndrome so that is logic we can hope for its curing from a monetary regime.

A major argument for establishing a rules-based framework is to anchor expectations of economic agents and financial markets as regards policy goals and policymaking. Regarding monetary policy the expectations are to be anchored to price stability. Anchoring inflation expectations tends to reduce uncertainty and to encourage investment, saving and work effort decisions to be taken from a longer term

[4] http://en.wikipedia.org/wiki/Arrow%27s_impossibility_theorem.

rather than a short-term perspective, so the reduction of uncertainty tends to lower the discount rate. The ensuing decisions contribute to higher economic growth. Introduction of a rules-based framework can be particularly useful for signaling a paradigm shift in a country where macroeconomic policy management has experienced erosion in credibility. If accompanied by much-needed structural reforms (rationalizing government employment, targeting subsidies and pensions, eliminating tax distortions, etc.), such policy signaling can initiate a virtuous economic cycle by inducing a decline in the sovereign risk premium, followed by a boost in economic activity, and culminating in an increased growth path (Kopits 2014).

The following monetary regimes exist (Table 3):

- Monetary targeting;
- Exchange rate targeting;
- Real exchange rate targeting;
- Inflation targeting;
- Hybrid;
- No strategy-strategy.

Table 3. Taxonomy of monetary policy regimes

	Monetary Targeting	**Exchange Rate Targeting**	**Real Exchange Rate Targeting**	**Inflation Targeting**
Final policy Goal	Inflation	Inflation	Competitiveness/ growth (inflation secondary)	Inflation
Intermediate Target	Money supply	Nominal exchange rate/ short-term interest rate	Real exchange rate	Forecasted inflation
Operational Target	Money base/bank deposit at central bank	Nominal exchange rate/short-term interest rate	Rate of crawl	Short-term interest rate
Primary shock absorber	Nominal exchange rate	International reserves	International reserves	Nominal exchange rate
Secondary shock absorber	Interest rate	Money supply	Interest rate	International reserves

Source: Habermeier et al. (2009, p. 57.)

In some respects, the European Union represents a special case of a monetary union with a highly decentralized system of subnational governments.

Although good practices have evolved in shaping rules-based frameworks, there is no universal standard applicable worldwide. In fact, it is hard to find two countries that have the same framework, even in terms of design, but especially in

practice. Whereas there is some convergence toward a standard template in the design and implementation of an inflation targeting regime (Kopits 2014).

3. Inflation Targeting worldwide

It is now widely accepted that the primary role of monetary policy is to maintain price stability. An operating definition of price stability that is now broadly accepted has been offered by Alan Greenspan "*Price stability obtains when economic agents no longer take account of the prospective change in the general price level in their economic decision making*" (2009). This is often thought to correspond to an annual rate of inflation in the low single digits. Inflation targeting is one of the operational frameworks for monetary policy aimed at attaining price stability. In contrast to alternative strategies, notably money or exchange rate targeting, which seek to achieve low and stable inflation through targeting intermediate variables – for example, the growth rate of money aggregates or the level of the exchange rate of an "anchor" currency – Inflation Targeting involves targeting inflation directly. The literature offers several different definitions of inflation targeting. In practice, however, inflation targeting has two main characteristics that distinguish it from other monetary policy strategies:

1. The central bank is mandated, and commits to, a unique numerical target in the form of a level or a range for annual inflation. A single target for inflation emphasizes the fact that price stabilization is the primary focus of the strategy, and the numeric specification provides a guide to what the authorities intend as price stability.
2. The inflation forecast over some horizon is the de facto intermediate target of policy. For this reason inflation targeting is sometimes referred to as "*inflation forecast targeting*". Since inflation is partially predetermined in the short term because of existing price and wage contracts and/or indexation to past inflation, monetary policy can only influence expected future inflation. By altering monetary conditions in response to new information, central banks influence expected inflation and bring it in line over time with the inflation target, which eventually leads actual inflation to the target (IMF 2005, pp. 161-162.).

Table 4. Inflation target worldwide

Country	Inflation targeting adoption date
New Zealand	1990
Canada	1991
United Kingdom	1992
Australia	1993
Sweden	1993
Czech Republic	1997
Israel	1997
Poland	1998
Brazil	1999
Chile	1999
Colombia	1999
South Africa	2000
Thailand	2000
Hungary	2001
Mexico	2001
Iceland	2001
Korea, Republic of	2001
Norway	2001
Peru	2002
Philippines	2002
Guatemala	2005
Indonesia	2005
Romania	2005
Serbia	2006
Turkey	2006
Armenia	2006
Ghana	2007
Albania	2009

Source: Sarwat (2012), http://www.imf.org/external/pubs/ft/fandd/basics/target.htm

Mishkin says that there are 5 major characteristics of this monetary regime, which are the follows: "Inflation targeting is a recent monetary policy strategy that encompasses five main elements: 1) the public announcement of medium-term numerical targets for inflation; 2) an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated; 3) an information inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments; 4) increased transparency of the monetary policy strategy through communication with the public and the markets about the plans, objectives, and decisions of the monetary authorities; and 5) increased accountability of the central bank for attaining its inflation objectives. Inflation targeting requires that a decision be made on what price

stability means in practice. Alan Greenspan has provided a widely-cited definition of price stability as a rate of inflation that is sufficiently low that households and businesses do not have to take it into account in making everyday decisions. This definition of price stability is a reasonable one and operationally, any inflation number between zero and 3% seems to meet this criterion (Mishkin 2001, p. 2.)".

Inflation Targeting has become an increasingly popular monetary policy strategy, with many countries now inflation targeters. After New Zealand had introduced Inflation Targeting were 27 other countries that adopted it, fixing the consumer price index as their monetary policy goal (Table 4). The government outsources the decision-making to an independent central bank which in turn is accountable to the government, the legislature, and the public. Performance under the inflation target is continuously monitored and communicated by the central bank (including through quarterly inflation reports); also, deviations from the inflation target must be explained (Kopits 2014).

3.1. What to do with IT in good times?

It is well documented that, by and large, performance under rules-based monetary frameworks has been favorable. Inflation targeting, whether explicit or implicit, conducted by independent central banks, has contributed significantly to an almost uninterrupted record of low inflation in more than three dozen countries around the world. Arguably, this record was helped significantly by tailwinds during the Great Moderation. Integration of the Asian workforce into the world labor market and IT-based productivity gains in industrial countries have been major drivers, which allowed a rather loose monetary stance (and complacency) in some countries. The experience has been particularly beneficial in emerging market economies, where inflation targeting has served as a useful disinflation device from double-digit rates

Most of the inflation targeters had poor initial conditions prior to the adaptation of Inflation Targeting regime (see Table 5). Table 5 represents a cross-country – in Emerging and Industrial countries – analysis (data source International Monetary Fund 2005, p. 178.).

However, in recent years, inflation targeting regimes in many of these countries have been under pressure from strong capital inflows associated with extraordinary liquidity expansion in the advanced economies (Kopits 2014).

Table 5. Initial conditions prior to adopting Inflation Targeting (0%=poor, 100%=ideal)

	Technical Infrastructure	**Financial system health**	**Institutional independence**	**Economic structure**
Emerging Countries				
Philippines	25%	29%	50%	13%
Israel	42%	22%	29%	48%
Czech Republic	33%	23%	60%	26%
Peru	8%	25%	83%	27%
Hungary	25%	50%	15%	53%
Korea	42%	44%	32%	29%
Brazil	25%	54%	56%	26%
Chile	25%	43%	67%	28%
Thailand	8%	57%	57%	44%
Poland	25%	42%	65%	35%
Colombia	25%	41%	63%	39%
South Africa	33%	64%	64%	53%
Mexico	58%	41%	68%	48%
Industrial Countries				
New-Zeeland	67%	43%	14%	28%
Iceland	58%	43%	33%	39%
Australia	67%	56%	57%	52%
Norway	58%	56%	64%	55%
Canada	100%	41%	48%	53%
United Kingdom	92%	62%	44%	53%
Sweden	92%	55%	66%	41%
Switzerland	58%	68%	77%	56%

Source: International Monetary Fund (2005, p. 178.)

3.2. What to do with IT in the times of financial crises?

„Today inflation targeting is been put to the test – and it will almost certainly fail" (Stiglitz 2008). The governors of different central banks of major advanced economies decided to reach certain overarching goals, which are the follows: (1) lower unemployment to a 6.5 % rate in the United States, (2) to save the euro in the European Union, and (3) to end deflation in Japan. Faced with zero-bound interest rates, central banks adopted "forward guidance," as a form of rule, in the implementation of quantitative easing programs (Woodford 2012).

In the European Union, the one-size-fits-all monetary policy in the euro area has been less than successful and the Stability and Growth Pact has failed upon implementation (Kopits 2014).

The other critics of IT Inflation targeting in transition economies has been a more challenging task than in developed economies (Daianu–Lungu 2005, Freedman–Ötker-Robe 2009, Rose 2007, Walsh 2009a, 2009b). As experience with IT in transition economies shows, the central banks in these countries often missed inflation targets by a sensible amount.[5] „The country experiences support the earlier arguments that countries do not have to satisfy a long list of preconditions at the outset to implement the IT framework successfully. Among the sample countries, only one (Canada) was well-positioned to move to a full-fledged IT regime at the time that it adopted the policy framework. In others, while some of the so-called preconditions were met, a number of them were missing and were established gradually over time after the adoption of IT (Freedman–Ötker-Robe 2009, p. 6.)", see also on Table 6.

After a brief period following the transition, all Visegrád countries (V4) opted for an inflation targeting regime, later Romania also introduced IT. In Table 7 we can state that out of 32 trials only 14 times (with green color) were reached the target in Czech Republic and in Poland between 1998 and 2013.

[5] Also criticize IT the following economists: Barry Eichengreen, University of California, Berkeley Mohamed El-Erian, PIMCO Arminio Fraga, Gavea Investimentos, Takatoshi Ito, University of Tokyo, Jean Pisani-Ferry, Bruegel, Eswar Prasad, Cornell University and Brookings Institution, Raghuram Rajan, University of Chicago, Maria Ramos, Absa Group Ltd., Carmen Reinhart, Peterson Institute for International Economics, Hélène Rey, London Business School, Dani Rodrik, Harvard University, Kenneth Rogoff, Harvard University, Hyun Song Shin, Princeton University, Andrés Velasco, Columbia University, Beatrice Weder di Mauro, University of Mainz, Yongding Yu, Chinese Academy of Social Sciences

Table 6. Main Elements of Successful Inflation Targeting Implementation

Conditions	**Countries satisfying**
Price stability as the primary goal of monetary policy	Romania and Turkey
Price stability main objective with other goals	Canada, Chile, Czech Republic; Hungary, Israel and Poland (with exchange rate bands)
Goal independence or agreement with the government on inflation target path	Israel (government set the target); Canada, Czech Republic, Hungary, and Turkey (joint between government and CB); Chile, and Poland (CB)
Absence of fiscal dominance (gov. access to CB credit limited/ prohibited)	Canada, Chile, Czech Republic, Hungary, Israel, Poland, Romania, and Turkey
Central bank instrument independence	Canada (de facto) Chile, Czech Republic, Hungary, Israel, Poland, Romania, and Turkey
Well-understood transmission mechanism	Relatively good in Canada (though with gaps); Basic at outset, with continuing efforts in: Chile, Czech Republic, Hungary, Israel, Poland, Romania, and Turkey
Reasonable degree of control over short-term interest rates	Canada, Chile, Czech Republic, and Turkey. Hungary, Israel, and Poland (though reasonable, it was complicated somewhat by simultaneous pursuit of the ER target)
Reasonably well-developed financial markets	Canada and Chile (well-developed) Czech Republic, Hungary, Israel (relatively well-developed), Turkey, Poland, and Romania (less well-developed)
Reasonably stable financial system	Canada, Chile, Hungary, Israel, Poland, Romania, and Turkey
Modeling/forecasting capacity	Canada (well-developed). In the remaining countries--little at the start, developed and improved over time.
Mechanisms of accountability	Canada (no formal accountability mechanism at the outset, but need to explain monetary policy to public; formal mechanisms established over time); Turkey (through requirement to inform the public about CB operations and monetary policy and when targets were not met at the designated time).

Source: Freedman–Ötker-Robe (2009, p. 6.)

Table 7. Inflation Targeting Systems in Czech Republic and in Poland between 1998 and 2013

	Czech Republic		Poland	
	Target	**Actual**	**Target**	**Actual**
1998	5,5-6,5%	10,70%	N/A	11,80%
1999	4-5%	2,10%	6,4-7,8%	7,30%
2000	3,5-5,5%	3,80%	5,4-6,8%	10,10%
2001	2-4%	4,68%	6-8%	5,50%
2002	2,75-4,75%	1,88%	4-6%	1,90%
2003	2,5-4,5%	0,11%	2-4%	0,80%
2004	2-4%	2,78%	1,5-3,5%	3,49%
2005	2-4%	1,84%	1,5-3,5%	2,13%
2006	2-4%	2,54%	1,5-3,5%	1,03%
2007	2-4%	2,86%	1,5-3,5%	2,49%
2008	2-4%	6,34%	1,5-3,5%	4,22%
2009	2-4%	1,03%	1,5-3,5%	3,45%
2010	2-4%	1,46%	1,5-3,5%	2,58%
2011	2-4%	1,93%	1,5-3,5%	4,27%
2012	2-4%	3,29%	1,5-3,5%	3,70%
2013	2-4%	1,42%	1,5-3,5%	0,90%

Source: IMF

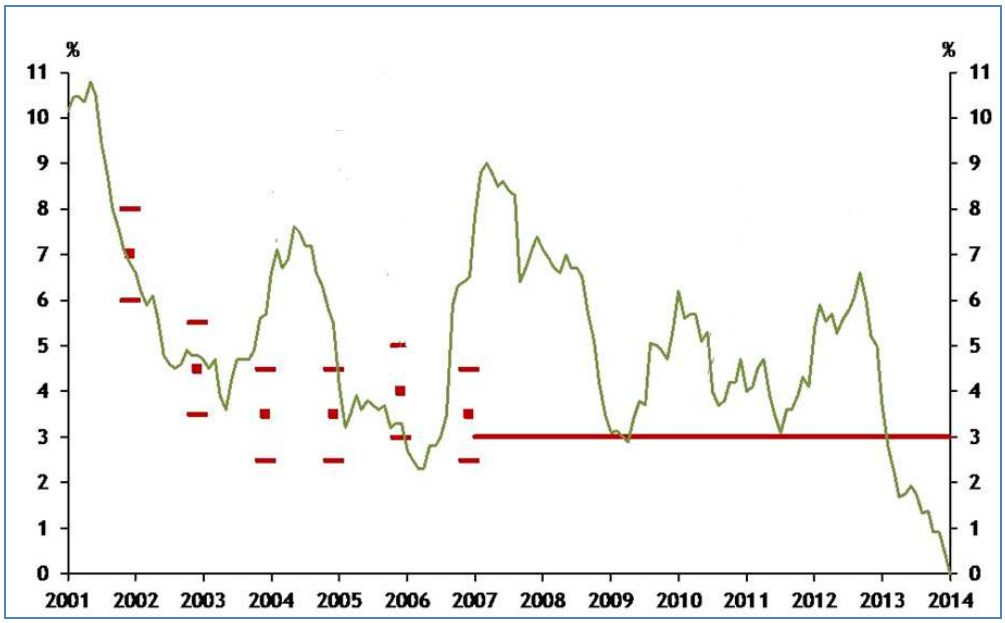
Contrary to the criticism that rules-based frameworks are too rigid, well-designed frameworks are sufficiently flexible to compensate for economic shocks. Indeed, inflation targeting can be constructed to allow explicitly or implicitly, in some cases automatically, for compensatory offsets to output shocks. For example, inflation targets can be formulated in implicit terms or within a band or (under the Taylor rule) with a dual mandate by including the output gap as an additional determinant (Kopits 2014).

4. IT in Hungary

Table 3 showed that Hungary is using an IT monetary regime. The central bank law states that the main goal of the Hungarian National Bank is to reach and sustain the

price stability. For this purpose there has been introduced the inflation targeting monetary framework (IT) since 2001.[6] The Hungarian National Bank with the government has a middle-term inflation rate goal, which is equal 3% of the official-, Central Statistic Office measured average consumer price index. The MNB said that this measure is consistent with the price stability, although many leader economists suggest that price stability may be 4% or above (see Blanchard et al. 2010, p. 11.). Figure 1 and Table 8. show the Hungarian IT's results.

Figure 1. CPI and Inflation Targeting in Hungary



Source: Hungarian National Bank

We can see that the IT has not been successful in Hungary. "The practical implications of long-term optimal inflation in Hungary are, to a certain extent, limited by the fact that the medium/long-term inflation target should meet the criteria of adopting the euro. In order to join the euro area, Hungary must reduce inflation to a level consistent with the relevant convergence criterion (Kiss–Krekó 2004, p. 4.)."

[6] Before 2001 there used to be the preannounced crawling exchange rate peg framework.

Table 8. Inflation and targets in Hungary

Year	Inflation	Target
2001	6,8%	5,8%
2002	4,8%	3,5%-5,5%
2003	5,7%	2,5%-4,5%
2004	6,1%	2,5%-4,5%
2005	3,3%	3%-5%
2006	6,5%	2,5%-4,5%
2007	8,0%	3,0%
2008	6,0%	3,0%
2009	4,2%	3,0%
2010	4,9%	3,0%
2011	3,9%	3,0%
2012	5,7%	3,0%
2013	1,7%	3,0%

Source: MNB and KSH

5. Hungarian monetary policy and the financial crisis

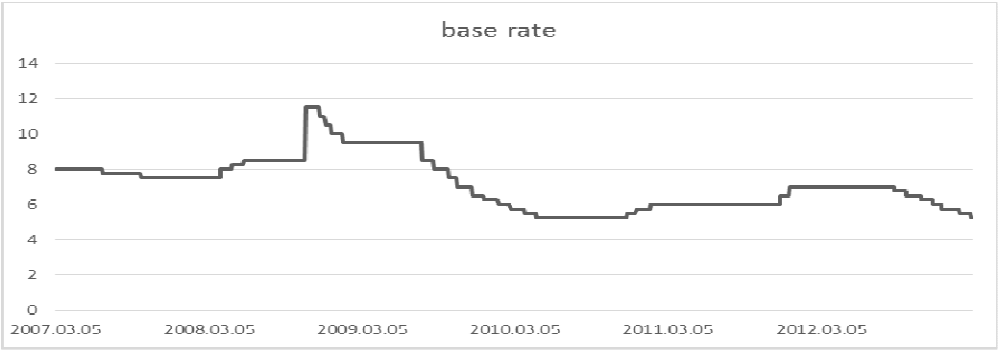
Just like the other economies in the region, in autumn 2008 the Hungarian economy was hit by several extremely severe shocks at the same time. Firstly, the immediate impact to the real economy caused by the collapse of demand in the export markets. Secondly, the liquidity shock as the entire economy was shaken by the sudden shortage of foreign-currency and forint liquidity. Since monetary policy could only respond to this upheaval tardily, and inefficiently due to reasons of principle and technical factors, all scope for budgetary-policy intervention was lost. It is an undisptable fact that Hungary had already lost the means of applying an anti-cyclical budgetary policy – by actively increasing the deficit during the crisis – in the years preceding the crisis. As a consequence of the grossly irresponsible economic (primarily budgetary) policies of previous years, unlike in neighboring countries, fiscal policy was unable or barely able to mitigate the terrible impacts of the crisis.

The financing of the budget – except in countries with reserve currencies – has temporarily run into difficulties in many other countries, due to the general drying up of local money and capital markets. But in these countries assertive and confident action by central banks, which often had no qualms about deploying unorthodox methods, succeeded in perceptibly dampening down the market tension related

to the financing of the government securities market. A necessary prerequisite for this, but not the only one, was that the central banks possess sufficient foreign exchange reserves to provide temporarily, over the short term, an adequate buffer to absorb the increased domestic demand for foreign currency, and to partly make up for the drop in foreign currency inflow, to meet payment obligations and fulfil conversion requests; in other words, making it possible to avoid the currency exchange rate going into freefall and benchmark interest rates from rising sharply and suddenly. For this reason, these countries were only forced to seek outside assistance considerably later.

The Hungarian economy was in a terrible shape when the international financial turmoil reached the country due to its relatively high level of external indebtedness, the high public debt, the overly extensive and badly-structured fiscal redistribution of funds, the extremely rapid and unfavourably-structured growth in forint and foreign-currency lending and the significantly overvalued forint, the high positive real interest rates. Figure 2 shows the base rate of that era.

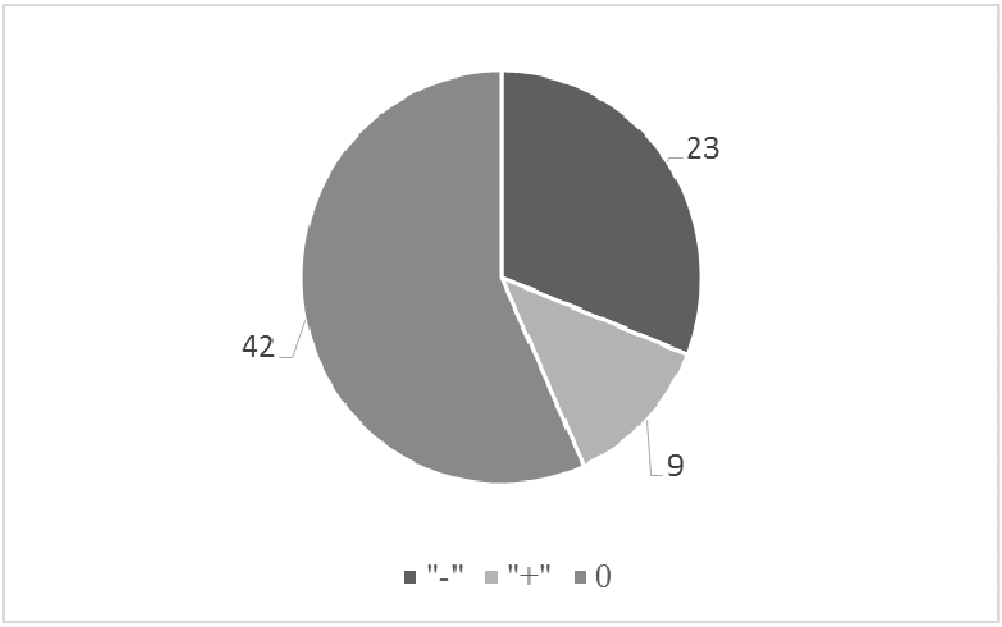
Figure 2. The base rate under Governor Simor



Source: MNB data with my own figuring

If we analyze the rate decisions of the Monetary Council we can state that under the era of Governor Simor's there were altogether 74 rate decision (see Figure 4). 42 times out of it there were neither base rate rising, nor base rate decreasing. 23 times were base rate decreasing and only 9 times decided the Monetary Council to raise the base rate. For a few drama-filled days in autumn 2008 the central bank raised the reference rate by 300 basis points (see in Figure 3), the only central bank in the region to do so with good reason.

Figure 3. Interest rate decisions of the MNB Monetary Council



Source: MNB data with my own figuring

Due to the shortage of sufficient foreign exchange reserves there wasn't any monetary action in the currency market in this severe times. The low international reserves prevented the central bank from performing one of its basic functions. Even over a short, 3-6-month horizon, the central bank was incapable of guaranteeing the liquidity of the Hungarian financial system without any major hitches; in other words it was only partially able to fulfil its role as the 'lender of last resort'. Over and above the technical restriction caused by the shortage of reserves, however, weighty matters of principle also led to the MNB being far less prepared for the crisis than its foreign counterparts. For many years prior to the crisis, the MNB believed in the self-regulating nature of the financial markets, and in their efficiency. It assigned itself the role of 'night watchman', and rejected out of hand any approaches that ran contrary to this. Before the crisis hit the central bank had not only passed over the opportunity to intervene in the currency market (as demonstrated by the strengthening of the forint exchange rate to HUF 228/EUR in the spring of 2008), but also declined to quote FX swaps (exchanges of foreign currency and forint deposits) and thus forewent the ability to influence liquidity, just as it had refused to take part in open-market transactions and actively shape market liquidity and market

expectations. After the agreement was concluded with the IMF, it was no longer so much the technical limitation that prevented the MNB from being active and courageous, innovative and prepared to make wide use of unconventional means and react with the appropriate degree of flexibility, but rather its inability to step out of its own shadow.

First and foremost, a fundamental change of principles and approach was needed, similar to the one that has taken place widely around the world as a result of the crisis. Despite an awareness of the substantial expansion in liquidity in the offing from the international financial institutions, there was no fundamental rethinking of the monetary-policy frameworks (Surányi 2010).

A significant relaxation of monetary policy would have undermined the forint exchange rage, thereby letting inflation and inflation expectations off the leash. In January 2009 the central bank gave off signals and made decisions that pointed in the direction of a dangerous, across-the-board monetary loosening. The unfortunate central bank communication regarding the exchange rate at the beginning of the year, and the further ill-advised interest-rate cuts, seemed to suggest that the central bank's policy was shifting from one extreme (the forcing of a strong forint) to the other (preference for a weak forint (Surányi 2010).

In an inflation targeting framework, the FX rate "in theory" floats freely. In the other group of countries, pegged or quasi-fix FX regimes are operated. The final goal of monetary policy is obviously to facilitate price stability. In text book cases, the most important tool of the central bank is setting the domestic interest rates in order to reach price stability and control inflation. This is true in theory and in big, closed economies. The effectiveness of the IT regimes is subject to heated debates even in big, closed, developed economies, while in the small, open economies of the CEE region the track record of the IT systems is very poor. A long series of empirical studies have already proved that the interest rate channel in these countries is much weaker than the FX-rate channel. One can believe in the IT systems or not, but it can not be disputed, that the only effective tool of the central bank is the FX rate – in a small, open economy. Hence, a central bank operating under an IT system, in practice should target the FX rate and adjust its interest rate level to the "implicit" FX target that is consistent with the inflation goal (Surányi 2009, 2010).

6. Conclusions

The fact that the inflation target has not been constantly achieved in Hungary, it does not in mean that the IT regime (which is much more than a public definition of

the inflation target) itself is unsuccessful. Many countries did not satisfy the preconditions, difficulties in establishing credibility.

A major argument for establishing a rules-based framework is to anchor expectations of economic agents and financial markets as regards policy goals and policymaking. Regarding monetary policy the expectations are to be anchored to price stability. Anchoring inflation expectations tends to reduce uncertainty and to encourage investment, saving and work effort decisions to be taken from a longer term rather than a short-term perspective, so the reduction of uncertainty tends to lower the discount rate. The ensuing decisions contribute to higher economic growth.

One can believe in the IT systems or not, but it can not be disputed, that the only effective tool of the central bank is the FX rate –in a small, open economy. Hence, a central bank operating under an IT system, in practice should target the FX rate and adjust its interest rate level to the "implicit" FX target that is consistent with the inflation goal. Hungary is a role model to show the need of a rethinking Inflation targeting framework.

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3. Islamic risk management and its role in defending from the Global Financial Crises: Useful practices for traditional banks

Assil Bnayat

Stability is a basic requirement for the proper functioning of the banking system and a key to its contribution to growth and development. During the 1980s, the failure of banks became a common phenomenon that preceded economic crises. Bank insurance funds in countries with deposit guarantee schemes have lost substantial amounts, causing the loss of taxpayers' money. The hope was that the crisis would be restricted to financial markets, with few repercussions on the real economies. This hope was shattered in September 2008 as the crisis entered an acute phase, with strong downward fluctuations in the stock markets and reduced rates of economic growth. Despite the financial crisis of 2008 is nearly five years behind us, yet its impact on financial markets persists. Financial institutions face a "New Reality" of lower returns, higher volatility and increased scrutiny from boards and regulators.

In the meanwhile, Islamic finance has been experiencing a rapid acceleration worldwide. According to reports, which conducted a worldwide survey of the development of Islamic financial institutions comparing to traditional financial institution during 2009, it shows a two-digit growth by the Islamic industry despite the severe impact of the global financial crises of 2008 and 2009. While Islamic financial institutions have successfully qualified the robustness test by exhibiting greater resilience during the recent global financial crises, regulatory regimes are under review in the wake of the financial crisis as regulators seek to bolster financial stability and avoid a repeat of the problems that led to the current situation.

The financial crisis has demonstrated the need for an integrated approach to risk management and one that encourages risk managers to think in terms of scenarios. In my research, I will discuss the challenges and opportunities of implementation the Islamic financial engineering methods that may assist conventional institutions facing in a changing market environment and frequent financial crisis.

Keywords: Islamic finance, financial crisis, risk-sharing, debt, interest, economic growth, stability

1. Introduction

The financial system has definitely played an active role in the accelerated development of the world economy, particularly the financial innovations: the revolution in information and communications technology. The system is, however, now infested by persistent and frequent crises. According to one estimate, there have been more than 100 crises over the last four decades (Stiglitz 2003, p. 54.). Not a single geographical area or major country, even though following sound fiscal and monetary policy, has been spared the effect of these crises. The prevailing financial crisis, which started in the summer of 2007, is more severe than any in the past and shows no sign of regress despite a coordinated bailout of three to four trillion dollars. It has seized-up money markets and led to a decline in property and stock values, bank failures, and nervous anxiety about the fate of the global economy and the financial system. This has created a feeling that there is something basically wrong with the system.

This gives an idea of the nature of issues under consideration for shaping new financial landscape. The environment within which today's financial institutions are operating is changing. By searching for a more enduring stabile solution there was a consensus among researchers to restore the financial transactions to their basic function – to provide services that add value to the real economy. This, in fact, represents the core elements of Islamic Financial system. The basic framework for an Islamic financial system is a set of rules that govern economic, social, political, and cultural aspects of societies that lead to their ultimate welfare. The overall resurgence of fundamental Islamic values in today's world has manifested itself on the economic system as well, with a number of countries, including western countries, having adopted Islamic institution into their economic system. However, concerns remain regarding the compatibility of Islamic financial principles with the conventional performance metrics, particularly, whether socioeconomic goals can be reconciled with the goals of profitability and market share.

This paper is at the crossroads of two literatures. The first literature addresses the issue of "what went wrong" in the development of the global financial crisis, starting from 2007 so called "sub-prime" crisis and culminating in 2008 into an unprecedented halt of the financial system, a system that was precisely under regulations aiming at providing such systemic crisis. The financial crisis is analysed from multiple points of view, including conventional and alternative. Both of them argue that the interest-based economy is unstable and leads, sooner or later, to distortion of all sectors of economy. The second literature addresses the topic of Islamic financial system capabilities to adjust to major disturbances.

The paper is structured as follows. Section II discusses briefly the rationale for the causes of the global financial crisis. It ends up to a summary that crises are endemic to the interest based system. The third first sub-section will provide an extended model, that takes into consideration core elements that differentiate conventional and Islamic financial systems, to prove that the latter is more resistant to major financial shocks. The next sub-section of this paper will be focusing on the empirical analysis. The descriptive performance for each of the systems during the last few years in this analysis will also provided. The last section will cover the conclusion for this research, with some suggestion of whether a system that abolishes the payment and receipt of interest can be viable in the arena of contemporary economies.

In the light of these observations, the present paper presents the Islamic system contribution to the overall economic stability through examining the contemporary trends in Islamic risk management practices and assessing the compatibility of their inherent potential for developing into the conventional interest-based system.

2. Causes of the global financial crisis

2.1. Conventional and alternative View

"The whole world economy has just hit the wall and is in free fall"
Larry Brainard, Trusted Sources, 2008.

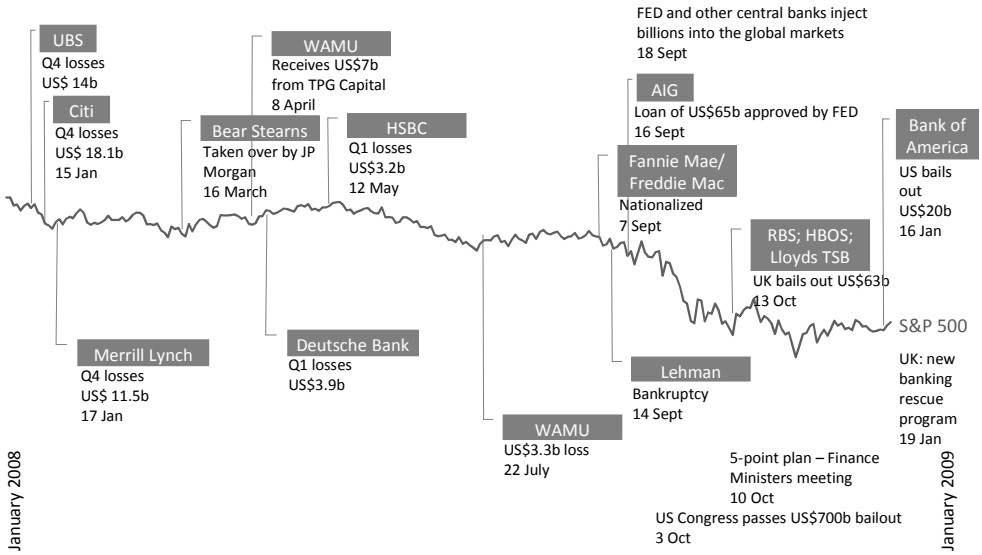
The whole world for the last five years has been in clutch of a financial crisis that swiped more than $3 trillion of bailout and liquidity injections by governments to abate somewhat its intensity. It is said to be far more serious than any experienced since the Great Depression.

There is, hence, a call for a new architecture that could help minimize the frequency and severity of such a crisis in the future (Camdessus 2000, pp. 1. and 7-10., Stiglitz 2007, p. 3., Baily et al. 2008, p. 44.).

It is not possible to design such a new architecture without first determining the primary cause of the crisis. It began in the subprime mortgage market of the US financial system. “Sub-prime” refers to a segment of market where loans, referred to as “Ninja Loans” (no income, no jobs and no assets), were extended in the lending

frenzy to buyers with low credit score and poor income-earning prospects.[1] In the period of run-up to the crisis, the US and global economies displayed robust growth, which was expected to continue. Interest rates were low, liquidity was high and growing, financial innovations were proceeding at a rapid pace (especially in securitization and structure finance), complacency in the face of growing risk was deepening, and regulation and supervision were receding and weakening (Mirakhor–Krichene 2009). All of this created an incentive structure that encouraged excessive risk-taking in search of higher yields.

Figure 1. The financial landscape has experiences significant shifts with many institutions collapsing or requiring government capital support



Source: Factiva, Bloomberg, Ernst and Young Analysis (2013)

To encourage sub-prime borrowers, banks offered a 30-year mortgage with low or zero down-payment and low interest rates for the first 2-3 years, after which the loan would be reset at double-digit interest rates. Bank would then package these

[1] The Subprime borrowers comprised a riskier class, generally with a FICO credit score of less than 640 (a credit score developed by Fair Isaac & Company, ranging between 300 and 850, with a higher score indicating a better chance of repayment). For this class of borrowers to have access to credit, the mortgages would need to be structured differently and the underwriting standards would have to be substantially weaker.

mortgages and sell them to special purpose vehicle (SPV) subsidiary they had established to securitize them into mortgage-backed securities (MBS). Hundreds of MBSs packed in a bunch to be rearranged and transformed into newly innovated instruments called collateralized debt obligations (CDO). They were divided into high-rated tranches that paid low interest but with the higher security of being the first to be paid in the event of default, and lower-rated subordinated tranches that paid higher interest rates but with lower security of repayment. Further innovation made it possible for an SPV to use these CDOs as an underlying asset to allow another packaging into CDO-squared and repackaged again into CDO-cubed, the next layer of CDOs, to be dissected into various tranches and sold. In result, that created a greater distance between the original underlying MBS assets and every new layer of instruments, which were distributed and sold far to geographically dispersed buyers in the form of structured investment vehicles (SIVs).[2] To run effectively, some sort of credit rating system was needed to give confidence to the purchaser of these instruments that the underlying risks were sufficiently analyzed and fairly rated. For this purpose, the SPVs, and other issuers of structured security, would always select the rating agency that granted investment grade at least possible cost and avoid other cautious agencies.

There was another factor that enhanced the downward spiral of the recent crisis i.e. the marked-to-market accounting rules conducted by banks. By selling their assets to the SPVs they has established, the banks moved those assets off their balance sheets, which allowed them to expand their balance sheets and, at the same time pass the risks to the buyers of these assets. When the crisis hit, the guarantees forced these banks to bring the assets back on their balance sheet, thus contracting them, which led to reduced credit and worsening of the ongoing credit crunch. It is worth noting also, that while banks' leverage ratio was about 10, these non-bank institutions, lacking from regulatory supervisory framework, could have leverage ratio as large as 30.

A forth factor that has tended to provide a false sense of security is the "too big to fail" concept which provides an assurance to "big" banks that the central bank will come to their assistance and bail them out in case of any financial problem. Banks which are provided with such a safety net have incentives to take greater risk than what they otherwise would (Mishkin 1997, p. 62.).

In addition to all above reasons, there was a fault risk management system that ignored the possibility of a market crisis, which should have been very important risk in the sub-prime market. This is due to interrelationship between mar-

[2] For a full explanation of these instruments, see: „Credit Derivatives Explained", prepared by Lehman Brothers' Structured Credit Research, available on the internet.

kets that when one market becomes liquidity constrained, the institutions are forced to sell assets (or positions) they hold in other markets, triggering asset sales by those highly leveraged non-bank institutions, producing this way a decline in asset prices in these other markets.

2.2. Interest-based system and instability

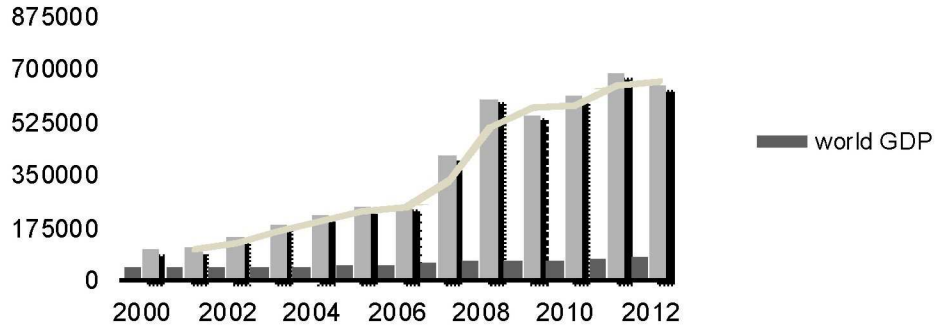
The alternative view of the financial crises sees that crises are endemic to the financial capitalism where prevailing mode of financing is the interest-based debt and credit contracts. The financial institutions make money off the interest rates they charge on the money lent. Borrowers, on the other hand, have three options to use this money to (i) finances new investments (which is obvious that this is the one mode to help the expansion of the economy) (ii) finances purchases of financial assets (iii) finances current consumption.

It is worth noting that, contrary to common belief, consumption today validates the debt obligations incurred for financing the past investments. Any fall in consumption represents a failure to validate payment obligations in the past. For validation past and present obligations, investment and consumption must grow. Debt, however, grows or declines for reasons other than those that cause investment in the real sector to grow. There is indirect connection between them through the interest rate mechanism. Banks, in fact, are not interested in real rate of return to an investment project but only, as the debt obligation is validated. To ensure that this will be the case, banks ask for collateral. Financial system becomes more sophisticated and innovations are much more needed to financialize as many commodities and real assets as possible. The financialization process, through interest-rate based system, transform equity in real assets into debt. The result was growing corporate debt-to-equity and household debt-to-income; income transfer from the real sector to the financial sector, where the orientation has been changed from saving-investment-production-export to borrowing-debt-consumption-import (Palley 2007).

This was evident when following the US economic indicators over the past three decades. Palley (2007) estimates that the total credit-to-GDP ratio grew from 140% to 328,6% of GDP between 1973 and 2005, while mortgage debt-to-GDP grew from 48,7% to 97,5% over the same period. Household debt-to-GDP grew from 45,2% in 1973 to 94% in 2005. The financialization process has also contributed, besides the expansion of debt, to adverse “changes in the functional distribution of income, wage stagnation, and increased income inequality” (Palley 2007). As the financial sector grows to dominate the real sector, layer upon layer of securitization, thins the connection between the two to the point where an inverted pyramid of debt is supported by a very narrow base of real sector output and assets (Mirakhor 2007). In 2006, the total world GDP was $48 billion while the value of global financial as-

sets was $140 billion (nearly three times more). As of 2007, the global liquidity market (80% of its liquidity composed of financial derivatives) was estimated to be 12,5 times as large as the global GDP (see Figure 2).

Figure 2. Derivative Market Vs. World GDP



Source: Bank for International Settlement

2.3. Keynes "euthanasia of the rentier" theory

In his books "*Treatise on Money*" and "*The general theory*", Keynes did not believe that there is neither theoretical explanation nor economic justification for the existence of *ex ante*, fixed interest rate payment. He sees that the scarcity of capital gives the financial capital owners demand interest rates for their money. Thus, interest is the price for the use of money, it is not the yield of capital. According to him, there is a class in market economies that lives on interest income and finds advantage in holding liquid assets rather than risking their holdings in employment-creating investments. He agrees that interest encourages socially wasteful saving and discourages socially desirable investments. It creates a wedge between saving and investment, conditions under which the whole system becomes unstable. In terms of the concept of "own rate of interest" he suggests that any commodity in the spot market will have a rate of return (+,0,-) in the future market. He explained that the future is uncertain so the rate of return to assets could not be known *ex ante* (fixed). While, he emphasis, the marginal efficiency of capital (the rate of return on real sector investments) is determined within the real sector of the economy, the *ex ante* fixed interest rate is determined by psychological and institutional conditions.

Through his theory "euthanasia of the rentier" he stressed the importance to increase in the volume of capital until it ceases to be scarce so that the functionless investor will no longer receive a bonus. All savings, in this way, will be channeled into productive employment-creating investment.

2.4. Minsky "Financial instability hypothesis"

As did Keynes before him, Minsky considered interest-based financial system as inherently unstable and that dialectic forces of it would lead to disaster if left to its own devices. His major contribution is known as the "financial instability hypothesis" (Mirakhor–Krichene 2009, Mirakhor 1985). This hypothesis contains two main propositions; the first states that there are two financing structures: one promotes stability, the other instability. The second proposition states that, in the financial system of money capitalism, stability is not sustainable because, during prosperity, stability contains the seeds of its own instability. Minsky referred to this proposition as "stability is destabilizing".

According to him, the system could be stabilized with "Big Government, as the effective employer of last resort' and "Big central bank, as the effective lender of last resort" and more important, imposing dynamic regulatory system.

2.5. Metzler' model

Although the financial systems dominated by interest-based debt contracts seen as more prone to financial instability, few, if any, notable economists have proposed explicit debtless system. Such works had just been theoretically investigated to analyze their implications in practice. One of the earliest analytically models of a stock market economy was developed by Llyod Metzler (1951), who investigated the economic implications of an economic system in which private wealth is in only two forms" money (including demand deposits) and common stock, and that all common stock involves appropriately the same degree of risk. Metzler assumed that common stock is the only non-monetary asset of the banking system. The model further assumed that it is closed economy the labor supply and all means of production were produced at constant returns to scale. In this way, the interest-rate was merely based on the performance of the stock in the market and earnings from the investment activity. The concept of *ex post* interest rate, rather than an *ex ante*, is then applied. Since it assumed away the existence of debt instruments, the Metzler' model was a reasonable first approximation of an Islamic financial system.

3. The Stability of Islamic Financial System

3.1. Theoretical consideration of the Islamic banking model

The Metzler model, mentioned above, was used and extended in new directions and further equilibrium models have been constructed to investigate the implications of

operations of an Islamic financial system, particularly as to the effects on the economy's capacity to adjust to disturbances, and on international capital flows (Khan–Mirakhor 1989, Mirakhor–Zaidi 1988, Mirakhor 1990). The uniqueness in such works that the stability characteristics demonstrated are generated within a conventional institutional framework and have proved to possibly, at least theoretically, envision a non-interest-based financial structure within a conventional system. However, a majority of relevant literature suggests (though using theoretical arguments rather than a formal empirical analysis) that Islamic banks[3] pose risks to the financial system that in many regards differ from those posed by conventional banks and that those features should be taken into account while assessing Islamic Banks' contribution to stability in a financial system where they are operating. Some of these risks[4] arise due to the unique nature of Islamic banks and are, particularly, associated with specific Islamic contracts and business model compliant with Sharia'. To understand some of these risks arising in Islamic banks, appendix II briefly examine the various items in their balance sheet.

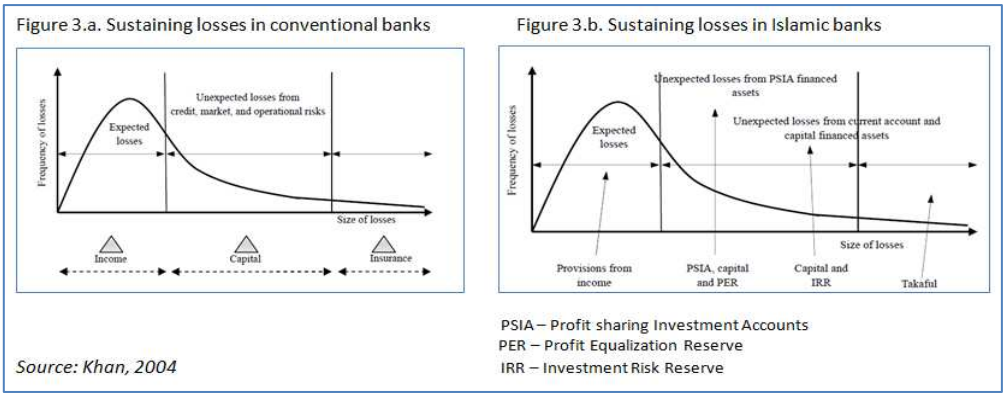
Based on Metzler-Khan model, this system of investment deposits is quite closely related to proposals aimed at transforming the traditional banking system into an equity basis made. Since the nominal value of investment deposits is not guaranteed and will fluctuate according to the performance of the bank, any shocks to asset positions are absorbed by changes in the value of shares (deposits) held by the public. Therefore, an equity-based system of this type can respond more easily and rapidly in the face of the banking crisis. In the traditional banking system the bank is expected to guarantee the nominal value of the deposit, so that any shock can cause a divergence between the real value of assets and liabilities. If the bank cannot absorb losses through its reserves and borrowings from the central bank, this divergence may well result in instability and possible collapse of the payments mechanism. With the value of deposits directly linked to the earnings, and therefore assets, of banks, such a possibility is excluded from the Islamic banking system.[5]

Figure 3 shows differences when analyzing the way of breaking losses for conventional and Islamic banks. The expected loss in conventional bank is broken even from the profit made by a bank in that period; the unexpected loss is to a certain extent broken even from the bank capital while the amount above that level is refunded from the insurance or the bank go in bankruptcy. The Islamic banks, however, break even the expected loss from the provision income; the unexpected loss,

[3] Appendix I provides an overview of the basic characteristics of the Islamic Banking.
[4] Appendix III provides an overview of the Risk types that Islamic Banks face due to their unique nature.
[5] For a formal analysis of the process, see Khan (1986).

to a certain of reliability, is refunded from the PSIA (if the unexpected loss was a result of investment into PSIA) or from capital (if such loss was due to other bank activities); while above that amount will be covered by the insurance, *takaful*.

Figure 3. Sustaining losses in conventional and Islamic banks



Source: Khan (2004), Kozarević et al. (2013)

From a theoretical standpoint, these features could make Islamic banks less vulnerable to risk than conventional banks. For example, Islamic banks are able to pass through a negative shock on the asset side (e.g. a Musharaka loss) to the investment depositors (a Mudarabah arrangement). The risk-sharing arrangements on the deposit side provide another layer of protection to the bank, in addition to its book capital. Also, the need to provide stable and competitive return to investors, the shareholders' responsibility for negligence or misconduct (operational risk), and the more difficult access to liquidity put pressures on Islamic banks to be more conservative (resulting in less moral hazard and risk taking). Furthermore, because investors (depositors) share in the risks (and typically do not have deposit insurance), they have more incentives to exercise tight oversight over bank management. Finally, Islamic banks have traditionally been holding a comparatively larger proportion of their assets than Conventional banks in reserve accounts with central banks or in correspondent accounts.[6] So, even if Islamic investments are more risky than con-

[6] Islamic banks operate couple of reserves, in addition to provision for loan losses (PLL). The profit equalization reserve (PER) is appropriated from the gross income of the murabaha for smoothing returns paid to the investment account holders and the shareholders. This reserve is deducted from both the shareholders and investment account holders. Note that while PER share of the bank (shareholders) is included in capital, the portion of the depositors is not. The investment risk reserve (IRR) is

ventional investments, the question from the financial stability perspective is whether or not these higher risks are compensated for by higher buffers.

3.2. Empirical analysis of systems performances

The development of the Islamic finance industry during the last three decades, starting from the introduction of Islamic Finance indices in conventional financial markets, followed by the financial innovations such as *sukuk* insurance, and last but not least, being successfully qualified the robustness test by exhibiting greater, than the conventional counterparts did, resilience during the recent global financial crises captured the attention of the global financial system.

As shown in a paper by (Kashyap et al. 2002), Islamic finance increased the potential pool supporting the system, and therefore providing extra liquidity, with the most important commodity in times of crises. This helped, with impetus of financial innovations, to increase the risk bearing capacity of economies, and thus, it improved the stability of the global economic system. In addition to their increment to the financial sector, it supported growth in real economy by creating much more access to financial resources for SMEs, entrepreneurs, firms and households, who were previously sidelined in financial system because of their religious, moral and ethical concerns.

However, despite of the development, it cannot be denied at all that Islamic financial institutions and economies suffered significant blows during the last financial crisis. Indonesia and Malaysia's losses in the East Asian Crisis; and the recent default of *sukuk* insurance market in Dubai, followed by numerous bankruptcy cases in the real economy, especially in the property development sector, are the very recent examples that Islamic finance might not be immune to the weaknesses of the global financial system (Asutay–Aksak 2011).

As a reflection of the arguments above, this section aims to address the implications of Islamic finance on the broader global economic system by investigating the sustainability of the theoretical benefits of such an introduction and development from both stability and growth sides.

In order the possibly capture differences based on the theoretical business models and investment strategy differences, the contrast of daily volatility of conventional and Islamic stock indices is strongly recommended.

Figure 4 representing the performances of both conventional and Islamic finance in the financial market and shows that they have been very closely correlated

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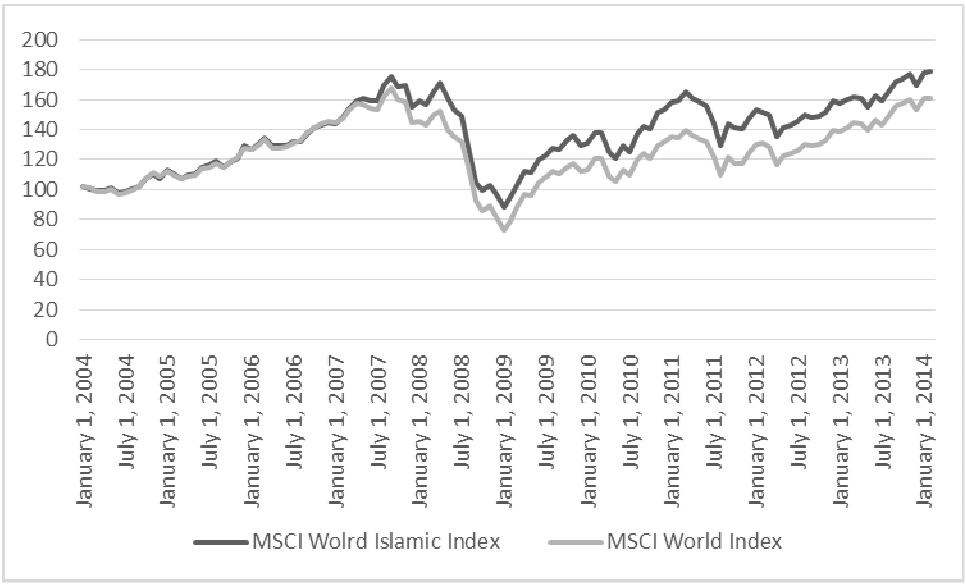
appropriated from the income of PSIA account holders only (i.e. after the deduction of the bank's share of the profit) to meet future losses on the investments financed by investment accounts.

to each other. As some preliminary studies suggest, one of the most important reasons of such correlation turned out to be the increasing debt-based murabahah instrument as a source of financing in the Islamic and finance industry, while their equity and asset based contracts remain marginal. This may imply a closer relation to the conventional markets.

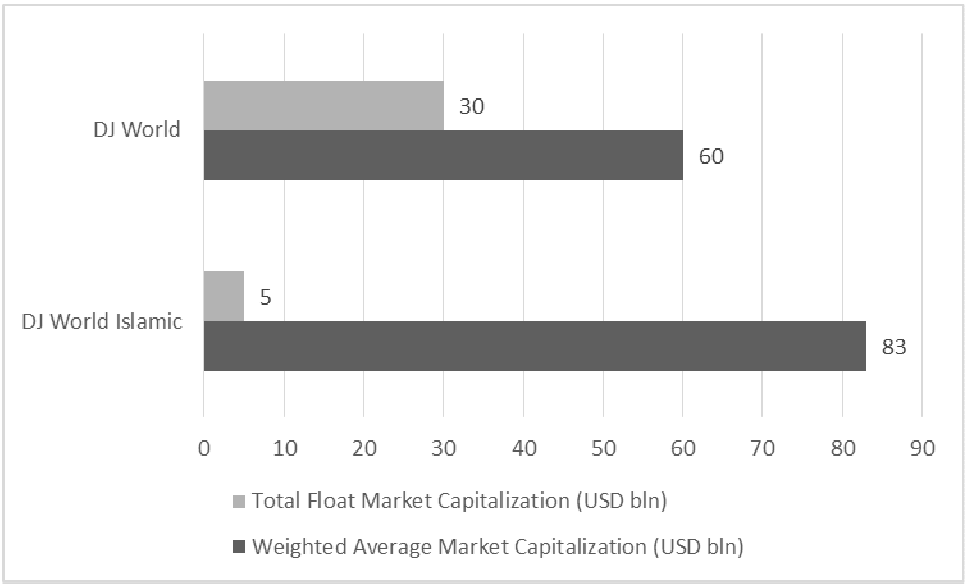
Figure 4. Selected Global Conventional and Islamic Equity Markets Indices

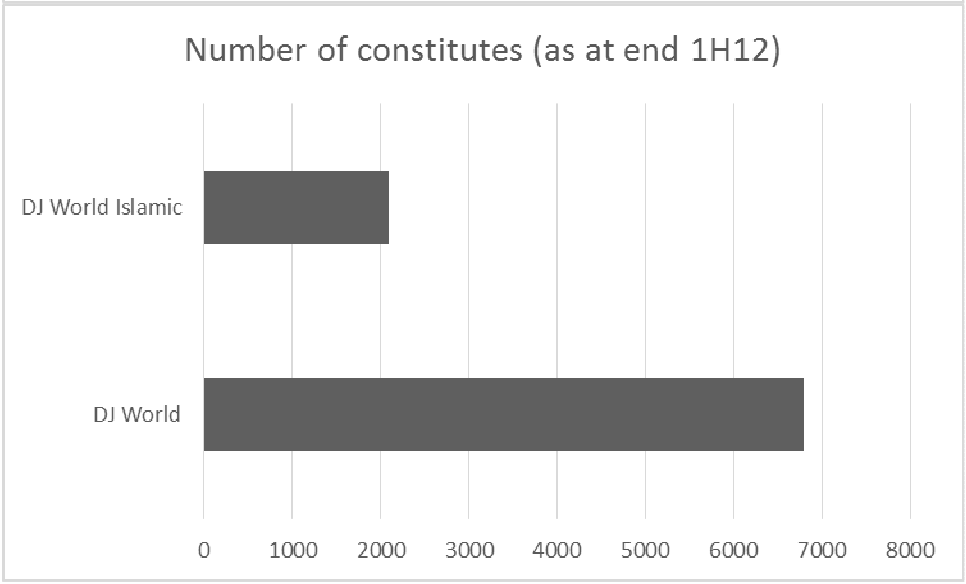


Source: MSCI

Hassan–Dridi (2010) provide contradictory evidence that the business model and investment strategies of Islamic banks differ from those of conventional banks. They report factors related to Sharia compliance and Islamic banks' business model helped them to contain the adverse impact on profitability in 2008 during the first phase of crisis; while weaknesses in risk management and corporate governance practices in some Islamic banks led to a larger decline in profitability compared to commercial banks in 2009, in the second phase. They also emphasize the importance of Sharia compliance requirements that limit the Islamic banks exposure to the kind of toxic instruments which turned the initial financial crisis into a global epidemic. In addition, they also suggest that the default of Dubai sukuk market in the wake of current crisis in a direct result of exceeding the concentration limits of the financial institutions in the markets, especially concentrated on real estate investments.

Figure 5. Market Capitalization and number of constitutes (as at end – 1H12)





Source: Dow Jones

As the main aspirations of Islamic finance were to achieve an alternative economic paradigm, which requires risk sharing, stimulation of economic growth and prosperity, Asutay–Askak (2011) progress a step further and question the ability of Islamic finance to meet the requirements of the real economy in comparison to the means of conventional banks. They contrast the returns of the financial markets, both conventional and Islamic, with the growth of GDP of selected economies as an indicator of the aforementioned link. They found out that the correlation between the conventional markets and Islamic financial markets are much higher that the relation between the latter and the real economy. They suggest mimicking of conventional markets by Islamic markets. This can be a result of size disadvantages of Islamic finance (Figure 5), as well as the tendency of Islamic finance investors to use the conventional markets as a benchmark for their diversification.

As a result, it is evident that there was a strong need for Islamic finance and it was welcome warmly by Muslim investors throughout the world. After the phase of initial welcoming response, it can be suggested that Islamic finance has moved into being an integral part of the financial system, rather than creating its own line to address the glaring weaknesses of the current and financial system.

4. Conclusion

In the light of the arguments above, we can definitely assume that the Islamic financial system is capable of minimizing the severity and frequency of financial crises by getting rid of the glaring weaknesses of the conventional system. It institutes greater discipline by requiring the financier to share in the risk. It links the growth of debt to the growth of real economy by allowing credit for purchasing real goods and services, which the seller poses and buyer wishes to take delivery. It prohibits the sale of debt so the creditor would be more careful when evaluating the risk associated. Islamic banking, by the system of justice, can also reduce the problem of subprime borrowers and provide credit to them at affordable terms.

However, there are a lot of problems that the Islamic Finance industry should encounter. First, it is still in its infancy and shares a very small proportion of international finance, if comparing with conventional finance system. The greater use of debt-financing and marginal of equity-based financing mode is one of the fateful problems that Islamic Bank should analyze and face. Moreover, even in the case of debt-creating modes all the conditions laid down by the Sharia are not being faithfully observed. This is partly due to the lack of proper understanding of ultimate objectives of Islamic finance, the non-availability of trained personnel, the absence of a number of support institutions (in terms of their experience in risk minimizing, deal-

ing with moral hazard, principal/agent conflict of interest). The Islamic Finance system is thus not fully prepared to play a significant role, and substitute the conventional finance system, in ensuring the health and stability of the international system. It is, however, expected to get momentum in the coming few years so it can increase its share globally to be the main player in providing and sustaining health and stability of the global financial system.

Up to now, and since the current architecture of the conventional financial system has existed for a long time, it would be difficult for the international community to accept radical structural reform of the kind of Islamic finance system envisages. However, it would be better to adopt some elements of the Islamic system, which are also a part of the western heritage, that minimizes the severity of crises and ensures the stability within the global financial system. Chapra (2009), suggests:

- Increasing the proportion of equity in total financing and decreasing that of debt.
- Credit expansion must be linked to the real sector and does not promote destabilizing speculation and gambling.
- Leverage needs to be controlled. Credit should be limited to the ability of the borrower to repay.
- Transparency standard to be maintained. In the case of CDOs, it would be desirable to have the right of resource for the ultimate purchaser so as to ensure the lender has incentive to underwrite the debt carefully.
- The CDOs protective role should be confined to the original lender and cannot cover other purchasers who wish to wager on the debtor's default.
- Systematic and proper regulations and supervision over all financial institutions.
- Some arrangements, other than microfinance programs, should be made by governments to make credit more available for subprime borrowers at affordable terms.

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APPENDIX I. Brief introduction to Islamic Banking

- Islamic financial services, as name suggest, must be conformed to Islamic Religious practices and law. They are characterized by the prohibition of *riba*, as *ex ante* predetermined interest rate, due to the fact that it is unsocial and harmful. Instead, it encourages the profit-and-loss sharing arrangements (PLS), purchase and resale of goods and services for fees. In PLS modes, the rate of return is not known nor fixed prior to undertaking the transaction. In purchase-resale transactions, a mark-up is lawful and must be agreed between the two sides of contracts, based on a benchmark rate of return (such as LIBOR in conventional system, with one difference that it cannot be changed during the time of contract).
- The second feature of Islamic Finance is the prohibition of trading in financial risk (which is seen as a form of gambling).

APPENDIX II. The characteristics of the Islamic bank balance sheet

On the asset side of an Islamic bank, the investment tools are dominated by fixed-income modes of financing and to lesser extent profit-sharing instruments. On the liability side, Islamic banks have demand deposits or checking/current accounts and saving and investment deposits.

Using profit-sharing principle to reward depositors is a unique feature of Islamic banks. The returns on PSIA are state-contingent and neither the principal nor a return is guaranteed. The owners of PSIA participate in the risks and share in the bank's profit and losses. Investment accounts can be further classified as restricted and unrestricted (PSIAr and PSIAu respectively), the former having restrictions on, among others, withdrawals before maturity date.

APPENDIX III. Risk Types that Islamic Banks face

Some unique risks arising in Islamic banks that are relevant and should be included in the risk management system assessment are discussed below.

- Fiduciary Risk - when depositors/investors interpret a low rate of return as breaching of investment contract or mismanagement of funds by the bank. It can also take the form of causing a serious confidence problem due to inability of the Islamic bank to comply with the Sharia.
- Withdrawal Risk – When a bank may not be able to pay competitive rates of return compared to its peer group of Islamic banks and other competitors. To prevent withdrawal and systemic risks, the owners of the bank will need to apportion part of their own share in profits to the investment depositors.
- Treatment of PSIA as Capital – There is, however, need for caution in treating all PSIA as capital. Depositors with funds in PSIAu are risk averse and too

much downside in their returns can lead to withdrawals that can create systematic risks. Thus, to minimize the withdrawal and systemic risk, none or very small portion of PSIAu should be treated as capital. When assets are funded by PSIAr, however, larger part of it can use as capital.

- Risks in Islamic Financial Instruments – Market risks can be systematic arising from macro-sources, or unsystematic that are asset or instrument specific. This problem arises due to the asymmetric information problem as the banks do not have sufficient information on the actual profit of the firm. To manage the risks, there is a need to clearly understand the risks involved in the Islamic instruments.
  1. Limitations in using Instruments to Mitigate Risks – as they are prohibited by law.
- Operational Risks – direct or indirect loss – resulting from inadequate or failed internal processes, people, and technology or from external events. Non-standardization of contracts between countries and lack of Islamic statutes and courts that can enforce Islamic contracts increases the legal risks of using these contracts.

Voszka, É. – Kiss, G. D. (eds) 2014: *Crisis Management and the Changing Role of the State.* University of Szeged Doctoral School in Economics, Szeged, pp. 71-87.

4. Critical approach to European austerity policies – A statistical analysis

Marcell Zoltán Végh – Klára Kazár

The Great Recession started in 2008 has induced a desperate crisis management procedure among the member states of the EU. Without sufficient common budget and legitimate common crisis management strategy, member states had to apply their own set of measures to moderate the economic and social effects of the crisis. Most member states suffered a W-shaped crisis, with a recession in 2008-2009, followed by a short period of stagnation or modest growth in 2010, and then in 2011, a second, more severe and prolonged relapse got started. Accordingly, the general phases of crisis management can be defined: firstly, anti-cyclical measures were dominant to restore the declining demand while, when the sovereign debt crisis burst out, restrictive policies and austerity became dominant.

The purpose of restrictive policies has been to restore confidence on the markets by setting a sustainable and credible government budget. It can be realized by increase of tax revenues or cuttings in government spending; although the first choice seems to be easier to realize, cuts in government spendings or the combination of both appears more effective. Moreover, balance-improving measures are often futile if not accompanied by adequate structural reforms. Austerity policies are frequently criticized because they strangle economic growth and disregard social sacrifices like unemployment or income inequalities. However, in times of such hectic trends in sovereign markets, for member states with massive levels of public debt austerity does not have a real alternative.

In our study, we aim to apply statistical analysis on austerity measures. As previous research suggests, too much austerity can be proven harmful for economic growth and impedes reaching pre-crisis levels of income. Our hypothesis is that member states applying the largest austerity packages recover more slowly than those applying moderate austerity. We collected our data from the AMECO database to examine the change in austerity measures and in recovery from the crisis for the EU-27 member states. We used variables such as the governments' total expenditures or social benefits to estimate the austerity measures; and the recovery from crisis was measured, among others, by the unemployment rate or by the gap between the actual and potential GDP. In our methodology, we examined the relations between austerity measures and recovery from crisis variables with the help of graphical and correlation analysis. Our study confirms our hypothesis and reveals additional information about fiscal consolidation.

Keywords: Great Recession, Eurozone crisis, economic policy, austerity policy, fiscal consolidation

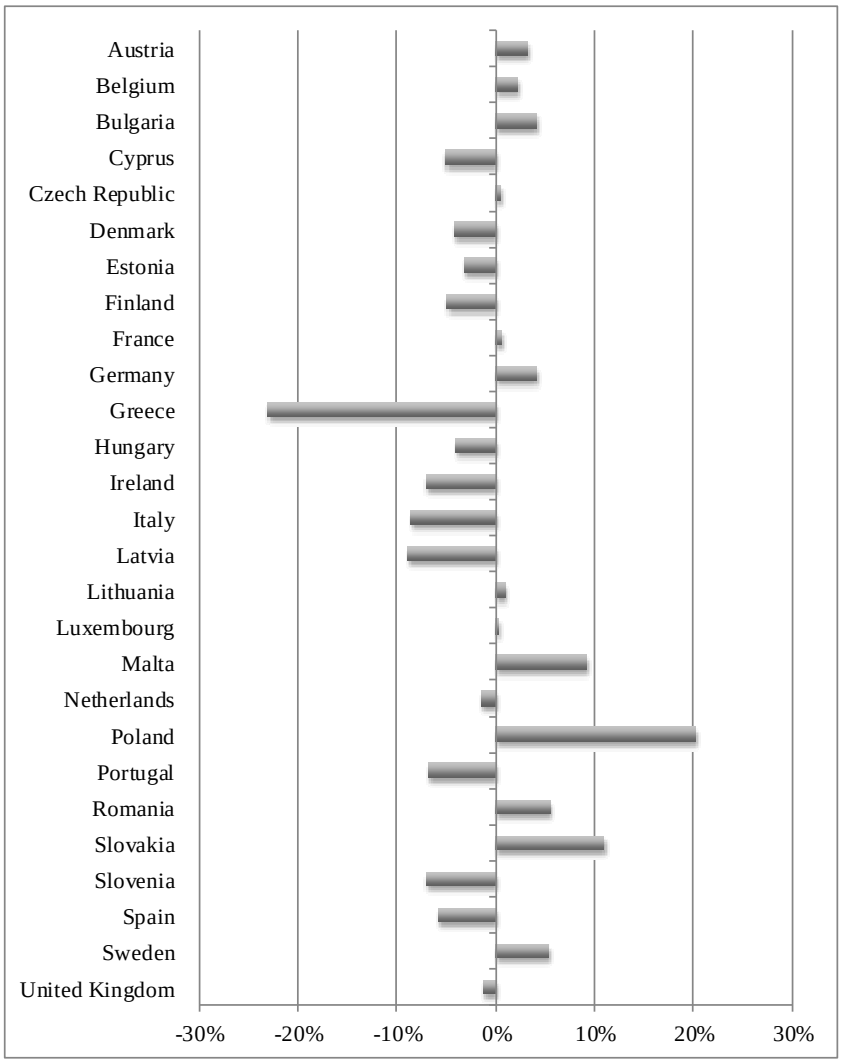
1. Introduction

After Europe's mostly prosperous decade, the Great Recession started in 2008 brought numerous years of recession in the economy of the European Union. Real gross domestic product of the EU-27 fell by 4.5% in 2009 and, although the general economic climate ameliorated in 2010-2011, the 2013 GDP at constant prices was still almost 1 percentage point below the 2007 level (AMECO 2014). Some member states suffered deeper recession; others were not seriously affected by the crisis, in terms of change in GDP (Figure 1). While the outlook of other economic regions (e.g. Japan and the US) looks brighter in early 2014, prospects of the EU-28 are still worrying (OECD 2013). While the sovereign default crisis seems to be over in Europe because of the moderation of sovereign bonds in the peripheral member states (Krugman 2014), the capability of resisting future crises seems unclear even if vast efforts have been made to strengthen the economic integration.

As stated earlier (Végh 2014), several EU-level attempts have been made to fight the early effects of the crisis but crisis management mostly remained as a member state competence. The reason for this lies in the small size of the common budget, which did not let the EU launch sufficient subsidy programs to restore aggregate demand in times of crisis (Wyplosz 2013). Common financial assets like the European Stability Mechanism basically could not decrease refinancing costs in the Eurozone. Moreover, the common monetary policy in the Eurozone has deprived its members of the option of generating inflation and performing currency devaluation (Krugman 2012, Dixon 2013) (Figure 2). This puts a different pressure on member states. Moreover, many member states have had to perform serious austerity measures to restore market confidence, especially where an EU-IMF intervention was realized. These austerity programs were often compelled and not well-founded and were mostly forced in a much criticized, 'one-size fits for all' method (Regan 2013).

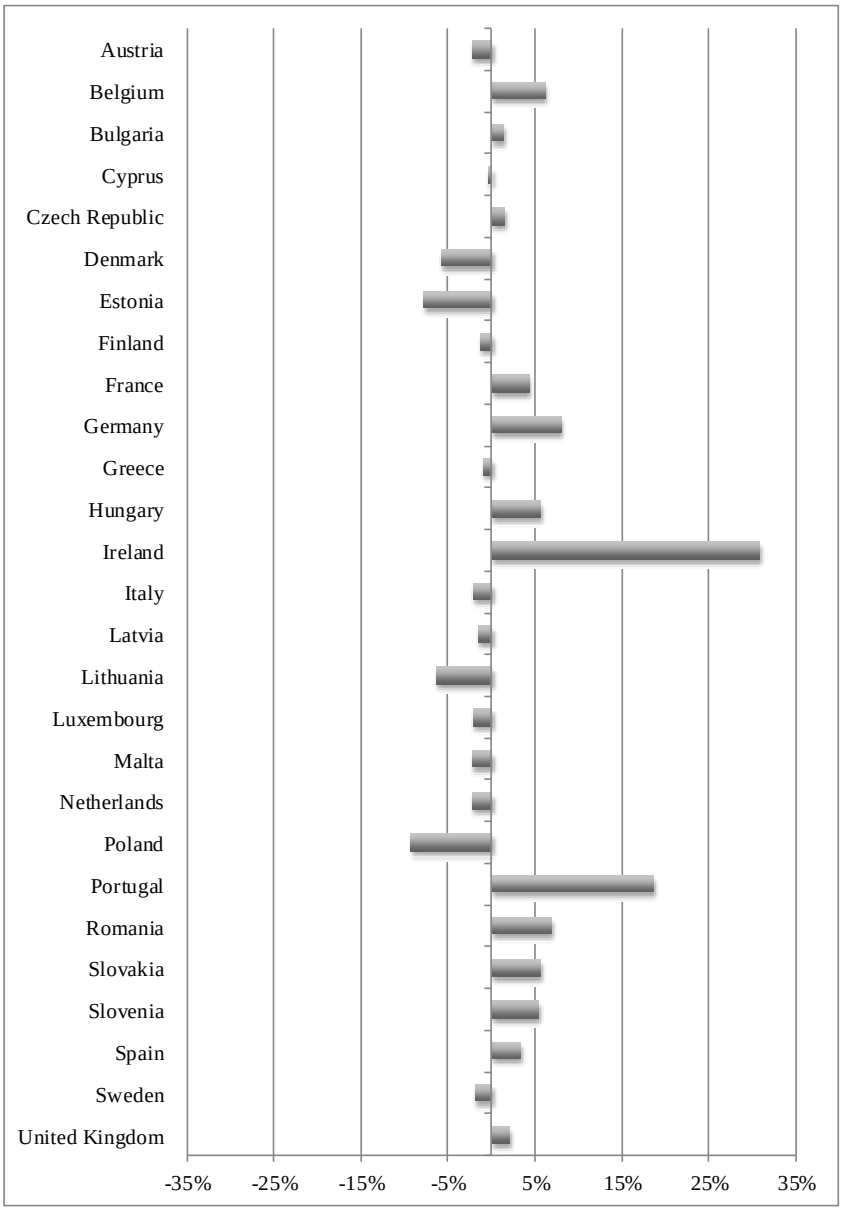
In this paper, our goal is to present critical arguments towards restrictive policies of the EU member states. We identify and examine indicators to measure their volume and compare them with economic performance indicators. To establish a connection between the two sets of variables, we use correlation analysis and cluster analysis.

Figure 1. Change in real GDP at constant prices of EU-27 (percentage, 2007-2013)



Source: AMECO Database

Figure 2. Net export of goods and services per current GDP of the EU-27 in 2010



Source: Ameco Database

2. Austerity policies in the EU

Comparison between economic policies of the EU member states can be troublesome. As Corsetti et al. (2012) points out, not only measures at country level, but conditions at regional and global levels could also affect macroeconomic results of an applied economic policy. What's more, economic policy measures cannot be examined without international context as one country's measures could affect the other's economic performance. Nonetheless, we aim to grab the general characteristics of economic policy through a statistical analysis. We believe that a general deduction can be established in respect of austerity policies. However, we know that our analysis has its limitations.

2.1. Necessity of austerity

Before the Great Recession, the dominant economic framework was based on the faith of markets behaving rationally and in a self-correcting way, so market imperfections are unlikely. Policy-making emphasized the importance of good macroeconomic governance; the school of saltwater economics dominated economic thinking. As Lucas (2003) concluded, the problem of depression-prevention has been permanently solved by modern monetary policy. Unexpectedly, the Great Recession revealed that market failures do occur, that financial markets are not necessarily self-correcting and that investor rationality cannot be taken for granted (Masera 2010).

In the EU, first reactions to the crisis were underestimating the volume of the economic shock. Firstly, the European Commission launched demand-increasing and job creating programs, to which member states reacted by applying anti-cyclical economic policies (Pelle 2010). However, due to the unexpected economic shock and risk avoidance, the costs of the demand-restoring packages had been underestimated. Tax revenues dried up as well so, in 2009, governments had to face the unsustainability of public finances. This was accompanied by the continuous augmentation of refinancing costs and rise of country-specific risks. In 2010, Ireland and Greece had to request financial help from the International Monetary Fund.

Austerity can be an effective crisis management tool: if an economy's refinancing costs decline and a balanced fiscal position can be restored, reimbursement of government bonds and their interest can be guaranteed so escape of capital can be stopped and investments can rise again. According to the neo-Wicksellian equilibrium (Savings[Y] - NX = Δ Bond_holdings[i - π, ρ]), within the framework of the EU, member states' economies could only be boosted by reducing the riskiness of bonds as these economies were in a liquidity trap, making monetary policy ineffective

(DeLong–Summers 2012). Member states requesting financial help from the Troika (IMF, EU, ECB) of international lenders[1] had to apply subsequent austerity packages (IMF 2011, Seitz–Jost 2012). Policy-makers from well-performing member states (e.g. Germany) urged austerity as well (Schäuble 2011). On the other hand, countries realizing fiscal consolidation took the risk of slow economic growth, persistent unemployment and social tension. In spite of the current decrease of refinancing costs, some argue that fiscal consolidation has not brought much success. Some blame austerity measures to be the very reason for permanent economic slump. Furthermore, even the IMF has partially shifted emphasis towards the importance of fiscal multipliers and stimulation (Plumer 2012, IMF 2012). By 2012 it became clear that the high level of indebtedness has no real effect on economic performance (Panizza-Presbitero 2012) and the popular Reinhart-Rogoff argument was also proved to be wrong (Herndon et al. 2013).

Recently, the arguments against forced fiscal consolidation have strengthened, (Krugman 2012, Stiglitz 2014) as it worsens competitiveness (Bagaria et al. 2012), scrutinizes the so far achieved social standards (Pelle 2013) and, as a natural consequence, creates social resistance among voters. Even if so, for economies with high sovereign risk, austerity remains an important tool. The European financial framework in its current form is still rather rigid and the Stability and Growth Pact does not leave much space for financial stimulation for indebted member states.

2.2. Measurement and hypothesis

Knowing all these arguments, our goal was to find an answer to the following questions: Is there any correlation between the size of fiscal consolidation and the volume of economic relapse? Is it possible to make critical remarks the current economic framework of the EU, which demands continuous austerity from the member states? Has austerity proven harmful for the member states by resulting in several years of recession and longer recovery?

Accordingly, we define our hypothesis:

H: For the EU member states, the larger the size of austerity, the longer the period of recovery from the current recession.

In our statistical analysis, we use data from the AMECO database for the 2007-2013 period. The basic unit of our analysis is a member state of the EU-27. We use data from 2007 as a reference point as it is regarded as the last full year pre-

[1] Ireland, Greece, Hungary, Romania, Cyprus, Latvia, Portugal.

ceding the crisis. For describing the current economic situation of member states, we chose data from 2013.

To measure the volume of fiscal consolidation, we have chosen the following indicators (reallocation variables):

- Change of government total expenditure in percentage of GDP: this indicator can reveal the increase or decrease of reallocation level within a member state; however it can be distorted by the change of GDP as well.
- Change of government total revenues in percentage of; it can also reveal the change of reallocation and also refers to the change of tax increases or decreases.
- Change of current tax burden in the percentage of GDP.
- Change of social benefits in percentage of GDP. This indicator is connected to the first one; it implies that fiscal consolidation is often accompanied by cuts in social spending.
- Change of gross public debt in percentage of GDP. It shows the change in the level of indebtedness. Anti-cyclical measures are often accompanied by increase of debt levels while austerity programs aim to decrease indebtedness.

To measure economic recovery after the crisis, we defined three indicators (recovery variables):

- Change of unemployment rate: one sign of the end of the crisis in an economy is when employment is restored to pre-crisis levels.
- Change of GDP at constant prices: it refers to the most common concept of crisis being over when GDP reaches pre-crisis levels.
- Gap between actual and potential GDP in 2013.

3. Data analysis

Firstly, we introduce descriptive statistics followed by results of our correlation analysis. Finally, the cluster analysis is displayed.

3.1. Descriptive statistics

In our analysis, we examined the EU-27 member states, variables of reallocation change were expressed in percentage of GDP. We calculated a difference between 2013 and 2007, thus the variables show the change in reallocation expressed in percentage points. Within the recovery dataset, the unemployment rate also showed the difference between 2013 and 2007 in percentage points. The GDP at constant prices can be found on AMECO at 2005 market prices; we examined the ratio between

2013 and 2007, which is expressed in percentage. The gap between the actual and potential GDP can also be found on AMECO at 2005 market prices; we examined the gap in 2013, which is expressed in percentage points (Appendix).

In the case of reallocation variables, it can be seen that the means cannot be typical values for the EU-27 because the standard deviations are high compared to the means (Table 1, Appendix).

Table 1. Descriptive statistics about the variables of reallocation change (percentage point)

Indicator	Mean	Median	Std. Deviation	Minimum	Maximum
Expenditure change (2013-2007)	3.79	3.88	3.41	-1.92	10.72
Revenue change (2013-2007)	0.28	0.90	2.55	-5.05	3.91
Current tax burden change (2013-2007)	-0.50	0.13	2.37	-5.56	3.46
Social benefits change (2013-2007)	2.46	2.61	1.47	-0.55	5.19
Gross public debt change (2013-2007)	29.73	23.23	22.82	1.13	99.52

Source: Own calculation

It can be seen that in expenditure change, the maximum value was 10.72 percentage points (Greece). Greece had the maximum value in revenue change (3.91 percentage points), Luxembourg had the maximum value in current tax burden change (3.46 percentage points), Spain had the maximum value in social benefit change (5.19 percentage points) and Ireland had the highest value in gross public debt change (99.52 percentage points). Half of the countries had at least 23.23 percentage points change (median) in gross public debt

In the case of recovery variables, the standard deviations are also high compared to the means, therefore the means are less informative in the EU-27 (Table 2).

The maximum value in unemployment rate change was 18.70 percentage points (Greece) while the minimum value was a 3.3 percentage points decrease (Germany). Only Germany and Malta had a decrease in unemployment rate and half of the countries had at least a 3.4 percentage points (median) increase. Regarding GDP at constant prices, Poland had a 20 percent increase (from 2007 to 2013) while Greece had a 23 percent decrease (from 2007 to 2013).

Table 2. Descriptive statistics about the variables of recovery

Indicator	Mean	Median	Std. Deviation	Minimum	Maximum
Unemployment rate change (2013-2007) (percentage point)	4.75	3.40	5.16	-3.30	18.70
GDP at 2005 market prices change (2013/2007) (percentage)	0.99	0.98	0.08	0.77	1.20
Gap between actual and potential gross domestic product (2013) (percentage point)	-2.81	-2.35	2.62	-12.80	1.24

Source: Own calculation

3.2. Correlation analysis of the reallocation change and recovery

Our research focuses on the relationship between the change of reallocation and recovery from crisis, which can be examined by correlation analysis. Some of the variables (revenue change, gross public debt change, unemployment rate change and gap between actual and potential GDP) do not have a normal distribution (p-value of Shapiro-Wilk statistics for each variable is <0.05), therefore Spearman's correlation coefficients were calculated. According to the correlation coefficients (Table 3), we can describe the relationships between each reallocation change and recovery variables.

Table 3. Correlation analysis between reallocation change and recovery variables

Variables	Unemployment rate change (2013-2007)	GDP at constant prices change (2013/2007)	Gap between actual and potential gross domestic product (2013)
Expenditure change (2013-2007)	0.312	-0.543	-0.430
Revenue change (2013-2007)	-0.146	-0.250	-0.130
Current tax burden change (2013-2007)	-0.319	-0.063	-0.069
Social benefits change (2013-2007)	0.631	-0.698	-0.454
Gross public debt change (2013-2007)	0.617	-0.700	-0.447

Source: Own calculation

In the case of expenditure change and unemployment, the coefficient (r_s=0.312) shows a weak relationship with a positive direction but in the case of GDP at constant prices change and gap between actual and potential GDP, there are

moderate relationships with negative directions (r_s=-0.543, r_s=-0.430). This implies that countries with higher expenditure changes have lower changes in GDP at constant prices (and vice versa).[2] In the line of revenue change and current tax burden change, the correlation coefficients show only weak relationships.

The social benefits change has a stronger than moderate relationship with a positive direction in relation to the unemployment rate change (r_s=0.631). It implies that countries with higher social benefits changes have higher unemployment rate changes so increasing social benefits do not cause decreasing unemployment change. The social benefits change has a stronger than moderate relationship with a negative direction in relation to the GDP at constant prices change (r_s=-0.698). It refers to the fact that countries with higher social benefits changes have lower GDP at constant price changes so increasing social benefits cause decreasing GDP at constant price change. The social benefits change has a moderate relationship with a negative direction in relation to the gap between actual and potential GDP (r_s=-0.454). It means that countries with higher social benefits changes have lower gaps between actual and potential GDP.

The gross public debt change has a stronger than moderate relationship with a positive direction in relation to the unemployment rate change (r_s=0.617). It shows that countries with higher gross public debt changes have higher unemployment changes so increasing gross public debt does not cause decreasing unemployment change. The gross public debt change has a strong relationship with a negative direction in relation to the GDP at constant prices change (r_s=-0.700). It refers to the fact that countries with higher gross public debt changes have lower GDP at constant prices changes so increasing higher public debts cause decreasing GDP at constant prices change. The gross public debt change has a moderate relationship with a negative direction in relation to the gap between actual and potential GDP (r_s=-0,447). It means that countries with higher gross public debt changes have lower gaps between actual and potential GDP.

Based on the relationships, we can be conclude that some of the variables (social benefits change, gross public debt change) support our hypothesis according to which greater reallocation change does not lead to more favorable changes in recovery. However, the rest of the reallocation change variables (expenditure change, revenue change, current tax burden change) did not support our assumption clearly, which suggests that further analysis is necessary. As it was mentioned in the descriptive statistics part, the standard deviations of the indicators were quite high, which

[2] For correlation coefficients, causality can be interpreted from the point of view of both variables.

suggests that more homogenous groups of the countries should be created by cluster analysis.

3.3. Cluster analysis based on the reallocation change variables

The core idea of our study is to examine the effect of changes in reallocation on changes in recovery. We applied a hierarchical clustering (Ward's method, Euclidean distance).[3] The number of clusters can be determined based on the increase in squared Euclidean distance (Sajtos–Mitev 2007), which suggested a 4-cluster solution. We also examined the 3- and 5-cluster solutions but the interpretability was better in the 4-cluster solution. The clusters can be interpreted by the means of clustering variables (changes in recovery variables). A mean can be a typical feature in a group if the group's standard deviation is lower than the total (EU-27) standard deviation (Kovács et al. 2006). This criterion was fulfilled in the majority of the cells; there is only one high value in the fourth group, for gross public debt change.

There are nine member states (Belgium, Denmark, Greece, France, Luxembourg, Portugal, Slovenia, Finland, United Kingdom) in the first cluster where all of the means of reallocation change variables were higher than the mean in EU-27, thus higher changes in reallocation variables can be in this group (see Table 4).

In the second group, six countries can be found (Bulgaria, Latvia, Lithuania, Poland, Romania, Sweden) where the expenditures, revenues and current tax burdens decreased. The social benefits change was positive but lower than the EU-27 mean and the gross public debt change was lower than the EU-27 mean. This group can show lower changes in reallocation than other groups or the EU-27 means.

There are nine countries (Czech Republic, Germany, Estonia, Italy, Hungary, Malta, Netherlands, Austria and Slovakia) in the third cluster. All of the means of reallocation change variables were positive but only the mean of revenue change and the mean of current tax burden change were higher than the means in EU-27. This cluster is similar to the first one but shows more moderate changes in reallocation variables than the first group.

The fourth group contains three countries (Ireland, Spain, Cyprus) where there was a higher increase in expenditures, a higher decrease in revenues and a higher decrease in current tax burden than the EU-27 value. The highest social benefit and gross public debt changes can be seen in this group among the clusters, causing a high standard deviation. It can be questioned why Greece does not belong to this group as, similarly to these countries, Greece also has a quite high gross public debt change (Appendix). The explanation can be found in revenue changes. While

[3] For our analysis, we used SPSS 22.0 statistical program.

Ireland, Spain and Cyprus had a decrease in revenues, Greece had an increase similar to the other countries in the first cluster.

Table 4. Cluster means based on the change in reallocation variables (percentage point)

Clusters		Expenditure change (2013-2007)	Revenue change (2013-2007)	Current tax burden change (2013-2007)	Social benefits change (2013-2007)	Gross public debt change (2013-2007)
1 (n=9)	Mean	7.01	2.33	1.45	3.35	35.88
	Std. Deviation	2.49	1.18	1.19	0.66	19.80
2 (n=6)	Mean	-0.34	-2.56	-3.08	1.59	16.47
	Std. Deviation	1.37	1.50	1.24	0.98	13.16
3 (n=9)	Mean	2.65	1.36	0.36	1.47	18.43
	Std. Deviation	1.66	0.67	1.01	1.32	8.23
4 (n=3)	Mean	5.84	-3.46	-3.79	4.48	71.74
	Std. Deviation	0.77	1.53	1.60	0.64	24.06
Total (EU-27)	Mean	3.79	0.28	-0.50	2.46	29.73
	Std. Deviation	3.41	2.55	2.37	1.47	22.82

Source: Own calculation

After the description of the clusters based on changes in reallocation, the changes in recovery in each group can be examined. In the first cluster, all of the countries had increasing unemployment rates, however, the mean (5.09 percentage points) is not a typical value due to the high value of standard deviations (Table 5, Appendix). The change in GDP at constant prices shows also a mixed picture because Greece had a 23 percent decrease, which pulled down the mean of this group. As regards the gap between actual and potential GDP, the standard deviation is also higher than the EU-27 value, thus a typical feature cannot be drawn based on this variable. This group showed the highest changes in reallocation variables, however, only a mixed picture can be drawn about the changes in recovery indicators.

Table 5. Change in recovery in the clusters

Cluster		Unemployment rate change (2013-2007) (percentage point)	GDP at constant prices change (2013/2007) (percentage)	Gap between actual and potential gross domestic product (2013) (percentage point)
1 (n=9)	Mean	5.09	0.95	-4.10
	Std. Deviation	5.67	0.08	3.42
2 (n=6)	Mean	3.85	1.04	-1.29
	Std. Deviation	2.92	0.09	1.09
3 (n=9)	Mean	2.18	1.01	-2.14
	Std. Deviation	2.81	0.06	1.88
4 (n=3)	Mean	13.23	0.93	-3.98
	Std. Deviation	4.86	0.01	2.65
Total (EU-27)	Mean	4.75	0.99	-2.81
	Std. Deviation	5.16	0.08	2.62

Source: Own calculation

The second cluster has lower standard deviations (compared to the EU-27 values); therefore the means describe this group well. The change in unemployment rate was lower, the change in GDP at constant prices was higher, and the gap between the actual and potential GDP is lower than the EU-27 value. This group had the lowest changes in reallocation but the highest values in recovery. The third cluster has also lower standard deviations (compared to the EU-27 values) and the means show a better picture in changes in recovery than the EU-27 values. This group had moderate changes in reallocation variables.

In the fourth cluster, change in unemployment rate was higher and change in GDP at constant prices was lower than the EU-27 values. The change in gap between actual and potential GDP also shows a less favorable picture than that of the EU-27, however, there are differences in this indicator among the three countries. This group had the highest change in expenditure, social benefits and gross public debt change as well but the change in recovery variables cannot yet describe a prosperous situation.

These results show that the changes in reallocation or the increase of reallocation do not clearly affect positive changes in recovery. Moreover, some of the correlation coefficients and the results of the cluster analysis highlight that decreasing reallocation can be coupled with more favorable changes in recovery, which supports our hypothesis.

4. Conclusion

In this paper, our goal was to examine austerity policies applied in the EU member states during the years of the Great Recession. We presented the theoretical framework for fiscal consolidation, and also presented various related economic views. Our hypothesis was that the larger the size of austerity, the longer the period of recovery from the current recession. We used descriptive statistics and cluster analysis to approach this question. Of the most important results of the analysis we highlight that greater positive change in reallocation does not help economic recovery, which more social spending does not help fight unemployment, and that gross public debt change has a strong negative correlation with GDP at constant prices.

With our results, we regard our hypothesis as confirmed, namely that larger austerity is not accompanied by quicker recovery. However, with our current statistical assets, causality cannot be defined: we cannot claim that recovery is slow as a consequence of austerity, or austerity had to be applied because of economic slump and slow recovery. We plan to develop our model further in order to find statistical evidence concerning causality. We could overcome a serious limitation of the analysis by using data in proportion of potential GDP instead of real GDP because, by using the second one, the results are distorted by economic relapse.

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APPENDIX

Country	Expenditure change (2013-2007)	Revenue change (2013-2007)	Current tax burden change (2013-2007)	Social benefits change (2013-2007)	Gross public debt change (2013-2007)	Unemployment rate change (2013-2007)	GDP at 2005 market prices change (2013-2007)	Gap between actual and potential gross domestic product at 2005 market prices (2013)
Austria	3,47	1,99	1,95	1,61	14,61	0,70	1,03	-1,04
Belgium	5,85	3,06	1,77	2,67	16,41	1,10	1,02	-1,71
Bulgaria	-1,69	-4,81	-5,13	2,64	2,22	6,00	1,04	-1,68
Cyprus	6,73	-5,05	-5,56	4,30	57,24	12,80	0,92	-5,84
Czech Republic	2,29	0,15	-0,49	1,64	21,10	1,80	1,01	-3,39
Denmark	7,39	0,70	0,63	2,98	17,14	3,50	0,96	-4,71
Estonia	4,61	1,86	0,71	2,38	6,30	4,70	0,97	1,24
Finland	10,48	2,52	1,78	4,45	23,23	1,30	0,96	-2,71
France	4,47	3,07	2,80	2,61	29,28	2,60	1,01	-2,89
Germany	1,17	0,90	0,28	-0,55	14,34	-3,30	1,04	-0,96
Greece	10,72	3,91	1,72	3,77	68,90	18,70	0,77	-12,80
Hungary	-0,35	1,65	-1,55	-0,20	13,68	3,60	0,96	-3,48
Ireland	5,35	-2,01	-2,46	3,95	99,52	8,60	0,93	-0,95
Italy	3,33	2,07	1,25	3,56	29,71	6,10	0,91	-4,46
Latvia	0,22	-0,80	-3,04	2,35	33,41	5,20	0,91	0,20
Lithuania	0,26	-1,76	-2,94	2,07	23,09	7,90	1,01	-0,04
Luxembourg	7,77	3,22	3,46	3,07	17,84	1,50	1,00	-2,16
Malta	2,69	1,56	0,16	0,55	11,88	-0,10	1,09	-0,48
Netherlands	4,89	1,45	0,83	2,39	29,55	3,40	0,98	-3,35
Poland	-0,66	-3,62	-3,35	0,43	13,20	1,10	1,20	-2,09
Portugal	4,77	2,07	0,85	4,18	59,44	8,50	0,93	-4,59
Romania	-1,92	-1,46	-1,25	1,72	25,74	0,90	1,04	-1,77
Slovakia	1,80	0,58	0,10	1,85	24,73	2,70	1,11	-3,33
Slovenia	7,78	2,08	0,13	3,50	40,08	6,20	0,92	-3,14
Spain	5,43	-3,32	-3,36	5,19	58,47	18,30	0,94	-5,16
Sweden	1,73	-2,93	-2,77	0,35	1,13	2,00	1,06	-2,35
United Kingdom	3,88	0,36	-0,12	2,95	50,55	2,40	0,98	-2,23

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5. Geographically extended integration – A new tool for crisis management?

Ábel Czékus

The crisis escalated in 2008 is being considered as the biggest economic recession since the 1929-33 great depression. Although long term consequences of the recession are still unknown, some post-crisis trends seem to loom. In the context of international economics, the crisis could be evaluated as the shift of leading position from the North Atlantic region to the Far East. In this reading, not only countries of the Far East have to get familiar with their new roles, but Western Europe and North America as well. Economic and political orientation and realignment of the latter entities could result in pioneer solutions for the future economic and social prospects of their economies.

We discuss some of the possible post-crisis ways of economic development with regard to the opportunities Transatlantic cooperation hold out with putting special emphasis on the Transatlantic Trade and Investment Partnership (TTIP). Scrutinising and evaluating the EU-US free trade agreement would constitute a strong theoretical background of the post-crisis North Atlantic economic cooperation. However, cooperation of these economic giants would probably raise competition policy issues as well. At the first blush, the distended economic area could lead to a heated antitrust activity and pose – already disputable – questions on State aid.

The free trade agreement would undoubtedly count as a superior level in the contracting parties' economic development. Marriage portion of the TTIP would exert its positive effects chiefly in the EU and US economies, but the spill over would make stabilisation and growth felt in international economics as well.

Key words: integration, North Atlantic region, post-crisis Transatlantic economic order

1. Introduction

Central and Eastern European Countries (CEECs) celebrate the 25th anniversary of their liberation from the soviet occupation. 1989 resulted in a turning point for these nations, but opened new perspectives for the whole continent. Years of the Central European realignment coincide with some new trends in the international economics; beside the opportunities provided by the info-telecommunication revolution, vaulting international financial activities and enhanced volume of world trade backed by the process of liberalisation, the new economic constellation has brought

challenges as well. These processes are popularly named as globalisation, but making a clear sweep of all positive and negative consequencies into one hat would be a scientifically wanton attempt. On the other hand, in the post-cold war period the United States economy has played leading role in international economics. Not only its growing potential affects EU economy, but technological advancements induced by it as well.

In the light of this, we discuss the newest trends that characterise EU and US economic relations. The apropo of this paper is the forthcoming free trade agreement (officially the Transatlantic Trade and Investment Partnership (TTIP)). We consider TTIP as a tool for harmonising operational conditions on the markets covered; this agreement, furthermore, suits the decades-long trend of realigning transnational cooperation based on regional agreements. Several studies have been already issued on the settlement of TTIP (Bartl–Fahey 2013, Bergkamp–Kogan 2013, Bonciu 2013, Lester 2013). These articles discuss the negotiation and challenges risen by the agreement. Other authors (Aguilar et al. 2008, Fiott 2013, Lannoo 2013) highlight sectoral implications concerned by a Transatlantic cooperation. Going further, Andrews et al. (2005), Hamilton (2013), Hoffman (2013) or Siebert et al. (1996) dissect strategic issues on North Atlantic cooperation. Variable approaches shows that the evolving agreement involves heated scientific activity, both in Europe and overseas.

2. Intentions and obstacles on the road toward the trade agreement

Since the 1990s various attempts have being made by the EU and US administration with the clear aim of realigning economic relations. In this process signing the New Transatlantic Agenda (NTA) of 1995 and mutual recognition agreements (MRAs) show in a way of deepening economic linkages (EEAS 1995, Pollack–Shaffer 2005), but, in the meantime, trade disputes represents (or, in some cases, represented) considerable frictions. These emerge on the field of agricultural products (GMOs, Bananas, etc.), trade mark issues, or State aid considerations (Airbus-Boeing) (EP 2013a). Although disputes "block" the development the trade of a field, by virtue of this they have contributed to the sketch of a need for a new regulatory framework between the parties. However, the regulatory initiative of the World Trade Organisation (WTO) provides a settlement framework, in more specific cases it seems inefficient (Lester 2013). EU-US relations have reached a maturity level that calls out for a more chiselled agreement; Lester (2013) designed protectionism, regulatory issues and impacts on international trade as issues to be addressed.

Pollack–Shaffer (2005) argue a ternary concept on the EU-US economic relations. Firstly, they highlight the stability, continuity and resilience of the Transatlan-

tic relations even in the years of major (foreign) political discrepancies. The soaring volume of trade or FDI could be mentioned as the best examples on this field. Regulatory issues, on the other hand, mirror rather a variable stance since their advancement highly depends on the policy in question. Observing competition policy they conclude a complementary regime with minor frictions. The other end is that of the GMO-issue with conflicting interests and approach towards. However, MRAs could be handled as the fields of cooperation where regimes live side by side, even if there are only limited fields covered by these agreements. And finally, authors highlight that "changes in institutional and market power have shaped policy outcomes in distinct regulatory areas" (p. 6.) since international success is deeply affected by the parties' domestic institutional structure.

Scrutinising the previous legislative efforts on convergence and preparations of the TTIP, political and social factors couldn't be ignored. Spying scandal last year seemed to jeopardise and jamming the EU-US negotiations on TTIP, but the European Parliament – due to mutual economic interest – went on with preparations (EP 2013b). This approach totally fits the row previously mentioned on the superiority of the common economic interests. On the other hand, intensification of economic activities kindled by the new agreement, considerable social tension and challenges could dawn on the EU and US societies. Vice versa, the hang of economic growth could spur European politicians to hovel the agreement due to potentials it involves (Bonciu 2013). Parties highlight the magnitude of the Transatlantic trade, emphasising the benefits of a fully implemented agreement. According to the European Commission's calculation (EC 2013a) the cooperation would embodied in an extra income of €545 per household and would result in a 0,5-1% extra economic growth regarding the Old continent's economy. On the other hand, scholars hitherto ignored to review deeply impacts on employment of an agreement with such great implications. The EC (2013b) calms anxiety down by its own estimation of 0,7% of labour move due to the TTIP. The main question is whether labour markets and institutions responsible for employment and social affairs (governments, higher educational institutions, trade schools, LLL institutions, etc.) are prepared for the dowries of the agreement and blunting possible adverse effects induced by it. Only assessing and managing labour market recoils would result in long-term and enduring benefits for the signing parties. Considerations about economic activities on social embeddedness should therefore play crucial role in shaping macroeconomic policies, and – as seen in Granovetter's (2005) arguements – only an interpretation observing individual (on the level of entities) definiteness is watertight.

3. What could the TTIP result in?

Several governmental studies are scrutinizing would-be effects of the TTIP agreement (Barker et al. 2013, Cooper 2014, EC 2013b). The agreement would constitute the biggest free trade area in the world embracing two economic giants. They represent 45% of the world GDP (Barker et al. 2013) and Transatlantic commercial and investment linkages renders stability for the international trade. Economic cooperation of the EU and US would therefore mean not only an additional spur for the signing economies but stability and impetus for their trading partners as well.[1] It is worth to bear in mind, that in 2013 the EU was the most important merchandise trading partner of the US[2]; a year earlier statistics show a 100,1 billions of USD merchandise trade balance deficit for the States. Supplementing this Figure by the services sector, the weight of the EU in the US trade was much more notable, by a lowering deficit.[3] The last decade's change is represented in a three-steps Table (Table 1).

Table 1. US trade with the EU, trade and services, billions of USD

	2002	**2007**	**2012**
Exports			
Goods and services	238,4	424,7	463,5
Goods	140,4	242,2	269,7
Services	98	182,5	193,8
Imports			
Goods and services	311,3	502	534
Goods	225,4	356,2	384,3
Services	85,2	145,8	149,7
Balance			
Goods and services	-72,9	-77,2	-59,8
Goods	-85	-113,9	-100,1
Services	9,7	36,7	40,4

Source: Own edition based on Cooper (2014, p. 5.)

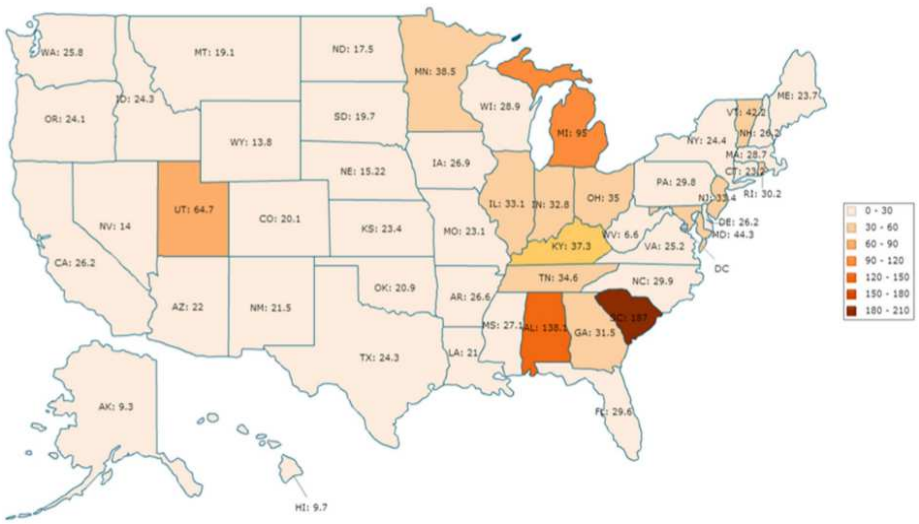
[1] According to the European Commission calculation this spill over effect could be slightly under €100 billion (EC 2013b).

[2] This statement is referring to the cumulated (exports plus imports) values, since the biggest export partners of the US was Canada, the biggest imports China.

[3] In 2012 the total (goods plus services) US exports to the EU reached 463,5 billions of USD, while imports 534 billions of USD.

Estimations on the benefits of the agreement were being made both for the US and EU economies. The European Commission states that "by 2027 we could expect the European Union's economy to be around €120 billion larger and the US economy to be €95 billion larger than they would be without TTIP" (EC 2013b, p. 6.) that is equal to 0,5% and 0,4% GDP growth, respectively. It should be noted that these gains do not constitute a one-off growth, but – after the agreement is being fully implemented – it would involve long-term favourable effects, too. Scaling these Figures onto benefits for common men, every European Union household would gain a €545 extra income, while this amount in the United States is €655 (Barker et al. 2013). Taking into account other macroeconomic indicators, authors demonstrate 750.000 new jobs[4] would be created by the positive impetus of the agreement only in the United States. On the field of employment, the EC highlights that export-oriented sectors would be the biggest job creating branches by stating that "TTIP may result in an increase by several million of the number of jobs dependent on exports in the EU" (EC 2013b, p. 2.).

Figure 1. Estimated percentage increase in US State exports to the EU after the implementation of the TTIP



Source: Barker et al. (2013, p. 4.)

[4] Under the supposition of 100% tariffs reduction, 25% reduction of nontariff burderns and in procurement barriers reduction of 50%.

Transatlantic economic relations are inevitable for both parties. More than 20% of total US export goes to the Old continent, while export of services counts 32% (Barker et al. 2013). States' share within these Figures varies, but generally spoken the liberalisation would put the agreement's watertightness in perspective. This is underpinned by Figure 1. On the other side, the US import would rise 28%[5] that would affect mostly the motor vehicle industry, metal products, processed foods and chemicals, as it is foreseen in the EC analysis, not taken into consideration beneficial impacts of the intensified competition. The most favoured EU industrial branches with their foreseen increasement are represented in Table 2. Barker et al. (2013), on the other hand, flash advanced manufacturing, financial services, hospitality and retail as the advantageously affected branches.

Table 2. Foreseen EU export increase due to the agreement

Industry branch	**Percentage change**
Motor vehicles	41
Metal products	12
Processed foods	12
Chemicals	9
Other manufactured goods	6
Other transport equipment	6

Note: These Figures embraces total EU export increase, not only that of toward the US
Source: Own edition based on EC (2013b)

Summarising, would-be advantages of the TTIP read out from the statistics shortly represented – although they are still only estimations – are more than attractive. Furthermore, a levelled current account balance (Cooper 2014) permits of parties to start negotiations on such an agreement. The agreement between the EU and US would give primarily new motion for their economic growth and development (embodied in enhanced competition and competitiveness, trade creation, etc.), but its sectorial and industrial dissemination shows rather a various stance. Important to emphasise the profound motivations of the agreement underlining the fact that "the EU and the US want to tackle barriers behind the customs border – such as differences in technical regulations, standards and approval procedures" (EC 2014, p. 1.), and this would include agricultural products as well. Furthermore, the spill over ef-

[5] Trade diversion is taken into account.

fect of the EU-US liberalisation would be beneficial for the rest of the international economy as well.[6]

4. TTIP regulatory considerations

Moulding a North Atlantic free trade area and setting single investment standards could be achieved by trade-offs. As the European Commission notification states, "the agreement is expected (…) achieving greater regulatory compatibility between the EU and the US, and paving the way for setting global standards" (EC 2013a, p. 1.), admitting inevitability of certain level of harmonisation of legal systems. More precisely, existing barriers, such as EU protectionary measures on trade, limitation of US public procurement, restriction on the flow of services, ought to be cutbacked. All these efforts need to be supplemented by the harmonisation of the EU-US competition regimes.[7]

Regulatory issues to be addressed by the negotiations might be labelled into three categories (EC 2013a, Lester 2013). Given the leitmotiv of mutually freeing market access, tariff regulations, trade defence and prescriptions on rules of origin need to be reconciled. In the services sector parties should grant the MFN treatment, supplemented by the US recognition of European qualifications. Another pivotal issue is that of degrading obstacles hampering investment, including the ticklish topic of American public procurement. On the other hand, the „behind-the-border" (EC 2013a, p. 1.) obstacles seem to obstruct much more liberal economic activities due to the co-existence of different health, environmental or patent norms. In this sense, TTIP would consummate initiatives of the 1990s since it exerts on hovelling compatibility of regulatory fields. Thirdly, parties are committed for a 21st century agreement that is able to address global challenges like sustainability is, and, furthermore, serving as a string for future agreements with similar intentions. This view is welcomed by the overseas party as well, since "if the US and Europe (...) can agree to a single set of rules, the rest of the world will likely follow" (Barker et al. 2013, p. 1.).

In the light of this, the need for competition policy harmonisation, as a tool for nearing operational conditions, is plain. Bonciu (2013) highlights the importance of rethinking State aid practices in this process, while Langhammer et al. (2002) un-

[6] Bonciu (2013) acknowledges this to the far-gone European (see EU-Turkey customs union) and North American (see NAFTA) integration that opens markets of other: non-signatory contries, and to other Transatlantic cooperation (for example EU-Canada free trade negotiations).

[7] For institutional considerations see Bartl–Fahey (2013).

derline the importance of the competition policy generally (including enforcement as well) in such a kind of integration.

Kovacic (2005) argues that the EU and the USA should mutually adopt competition policy best (more precisely 'better' – due to the never-ending evolutionary feature of the policy) practices with the clear aim of converging their competition policy regimes. He, based on Muris (2002), proposes a three-steps process (Kovacic 2002, p. 67.), in a strong correlation with NTA's objectives:

1. decentralized experimentation at the national or regional level;
2. the identification of superior approaches;
3. the opting-in to superior approaches by individual jurisdictions.

This scheme of interaction has to work not only on inter- and transgovernmental level, but on transnational level as well. Examples to follow are, as such, the renewed pre-merger notification process, merger guidelines, leniency programmes or the enhanced international competition policy cooperation. Gerber (2005), on the other hand, flashes the question not only of cooperation but frictions as well and states that "competition law was an area that seemed to many to be particularly suited to cooperative initiatives", while in the meantime – as well due to the EC decision on GE/Honeywell planned merger –, "the transatlantic governance relationship presented a murky and ambiguous picture" (p. 82.).

Lester (2013) furthermore argues another aspects of regulatory considerations. He supposes that in trading issues WTO regulations would prevail after the TTIP is being negotiated and signed. The SPS-plus (sanitary and phytosanitary) formula, on the other hand, would constitute a qualitative development and could be treated as a general novelty in the parties' cooperation. With the clear aim of yielding "greater openness, transparency, and convergence in regulatory approaches and requirements and related standards-development processes, as well as, inter alia, to reduce redundant and burdensome testing and certification requirements, promote confidence in our respective conformity assessment bodies, and enhance cooperation on conformity assessment and standardization issues globally" (p. 3.), this consideration is sound and the TBT-plus (Technical Barriers to Trade) chapter, that embodies these goals, would push the agreement further. And thirdly, convergence of regulatory practices would result in a more harmonious economic area. Bergkamp–Kogan (2013) welcome regulatory efforts, since – although dissimilarities in the parties' approaches – it would lead to "mutual recognition of equivalent product-related standards (…). If the EU and US are up this challenge, both trade and risk regulation, and ultimately, the citizens of the world's two largest markets, will be the winners" (p. 507.).

As seen above, and proved by the regulators' continuous efforts on policy streamlining, either competition regimes couldn't be handled as a matured collection

of rules and norms, but out and away an open-ended process. In this reading this policy is proactive; we argue if competition policy streamlining could follow the rate of economic changes and challenges (new types of cooperation, higher volume to be valued, more complex proprietary forms, etc.) it is faced by. Advisely, Kovacic (2005) underlines the need for investments in competition policy staff. This is even more important in the US-EU cooperation, since they are major partners in competition policy issues on the international scene. Exchanging best practices is therefore inevitable.

5. Conclusions

In this essay we rendered a short overview on the main motivations observable behind the desire of TTIP negotiations. We picked out only the most important estimations on the would-be effects of the borning North Atlantic free trade agreement. These data foreshadow considerable economic benefits for both the US and EU, but there are still only a limited number of scientific articles written on the topic. We attribute this to the initiation phase negotiations are at.

Based on the above mentioned considerations, the EU and US administrations are fully committed to the TTIP. A free trade agreement would primarily result in a mutually liberalised market access; in the case of the EU we highlight trade limitation cutbacks, while in the US access to the public procurements seems to be one of the most prominent questions. Furthermore, studies show the rest of the world economy would profit from such an agreement as well due to its spill over effects (trade creation, intensified competition, growing volume of investments, etc.).

Nearing trading and investment conditions implies harmonisation of policies and norms. In this process competition, trade, industrial, R+D and environmental policy augur to play special role, but some sectoral implications could attract attention as well. These trends suit the parties' decades-long commitment toward deeper cooperation and, as such, their enhanced cooperation could be one of the nascent corollary of the crisis. Summing up, TTIP would result in considerable economic benefits and could serve as a string for other economies with the desire of stitching economic relations more powerfully.

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6. EU-15 countries, new member states and harmonization of corporate income tax

Andrzej Karpowicz

The idea of common corporate income tax (CIT) in EU gains even more attendance. However, there are several features of particular EU countries, which make the benefits of EU-wide harmonization dubious and its effects could be unequally distributed. Among these features are inter alia: (i) requirement for capital, (ii) size of the economies, (iii) differences in labor taxation, (iv) set of public goods available to taxpayers, (v) agglomeration externalities, (vi) richness of societies and (vii) tax culture including tax morale. The differences within the EU are particularly visible taking into consideration two groups of countries i.e. the Old EU and New Member States. Based on some approximation of the economies of EU-15 and EU-12 countries, the article shows the obstacles for future CIT harmonization.

Keywords: Corporate Income Tax, Macroeconomic Policy, Fiscal Policy, Optimal Taxation

1. Introduction

The EU seeks to foster its internal market. This process involves also taxation. Therefore, it indents to harmonize taxes among the Member States. Following that path several indirect taxes (i.e. Value Added Tax, customs duty and excise duty) has been already unified to a great extend. Currently, the European Commission focuses on unification of direct taxes and particularly on CIT.

In view of the above, the European Commission proposed to introduce in the EU a unified method of calculation of the tax base (i.e. so called Common Consolidated Corporate Tax Base or CCCTB). According to the project, multinational corporations will be free to choose between CCCTB and existing national taxation rules. The decision on the tax rates under CCCTB should be left to the discretion of Member States. However, in the future a natural step forward should be both elimination of national regulations and harmonization of the tax rates to achieve full unification of CIT. Especially countries with elevated tax rates may be the strong advocates of such developments, in the hope that this will diminish their competitive disadvantage against Member States with low tax rates.

It is of course a future and uncertain matter and therefore cannot be subject to scientific verification. However, a question arises whether the whole EU, taking into

consideration current features of Member States, is economically able to accommodate a fully common CIT. Unfortunately, the EU seems not to be an optimal single fiscal area. This is because particular countries differ vastly. In this article I will show these varieties only based on general and approximated features two groups of countries represent – namely New Member States[1] and the Old EU countries.[2] In the following sections I discuss the differences, which are particularly relevant for CIT purposes for these regions.

2. Requirement for capital

Globalization of the world economy reveals in increased abilities of the international firms to shift taxable profits between countries and easiness of abroad investments. This has led to tax competition between the states. Not surprisingly Member States also take part in the so called "race to the bottom".

The most vivid feature of any tax system are taxation rates and therefore, they are often used in tax competition. Countries are encouraged to lower the CIT rates because they perceive them as an important factor, which either lures or deters foreign investments. Such reasoning is especially vivid, when the process is analyzed from the perspective of two groups of countries i.e. the New Member States and the EU-15. The Old EU on average significantly cut their CIT rates. The New Member States have responded to the CIT competition pressure and decreased their corporate income tax rates even more. This forced again the EU-15 to further tax rate reductions. The trend of disparity of average CIT rates in the Old EU and New Member States is depicted on the below graph.

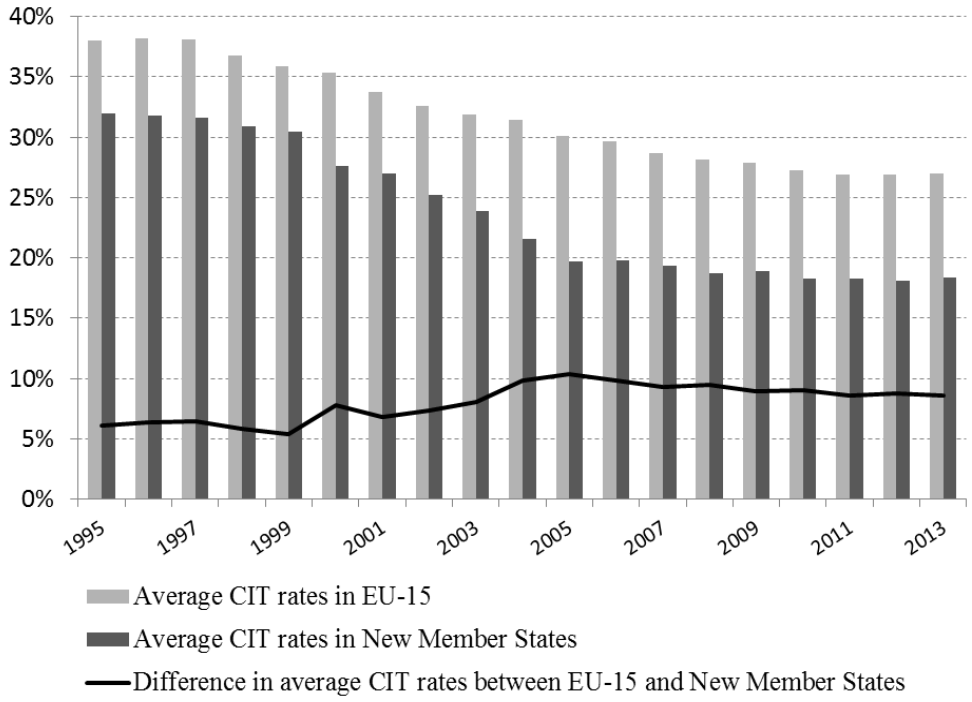
Based on the below Figure it seems that New Member States were more "in need" of capital than the Old EU, where the capital was already installed. After the fall of communism and in the years of transformation capital in Central Europe was scarce, which was unlike the Western countries. Even now the disparity is significant. Whereas according to the Eurostat data for 2012 the stock of foreign direct investments ("FDI") in EU-15 was EUR 6.1 trillion, this Figure for the New Member States was just EUR 0.5 trillion – a value much lower taking even into consideration the population of respective areas.

Taxation of foreign capital is always tempting. For example Huizinga and Nicodème estimated that a one percentage point increase in foreign ownership of the

[1] 12 countries, which joined the EU in 2004 and 2007 (Croatia, which accessed EU in 2013 is not included in the analysis).
[2] 15 countries, which formed EU before 2004.

companies increases the average CIT rate between a half and one percent (Huizinga–Nicodeme 2003). Therefore, the New Member States should constantly put more pressure on CIT competition than the Old EU and as a result full EU-wide CIT harmonization may not be beneficial for them.

Figure 1. Difference between average top CIT rates

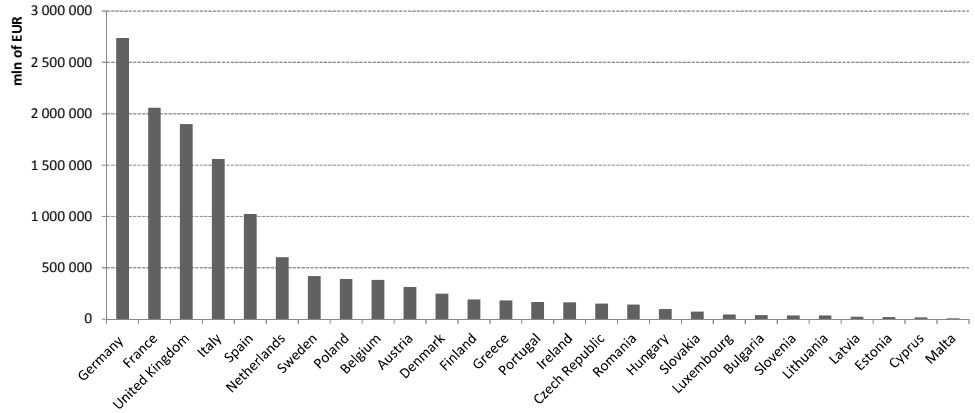


Source: Own construction based on data from Taxation trends in the European Union (2013)

3. Size of economies

The appropriateness of lower CIT burden levied on companies in the New Member States can be explained also by the differences in size of those countries. New Member States are on average smaller, if not always in terms of population, then at least measured by the size of the economy. Such comparison is presented below.

Figure 2. Size of the economies of Member States in 2013 (measured in GDP)



Source: Own construction based on data from Eurostat

As for 2013 among the twelve smallest economies of the EU, eleven were New Member States. The only exception was Poland with the economy of the size just in the middle of the stake of remaining 15 countries.

It may be stated that in fact independent tax jurisdictions share a mobile CIT base by competing for scarce capital. Classic economic models claim that assuming perfect capital mobility the optimal CIT rate for a small open economy equals to zero (Diamond–Mirrlees 1971, Zodrow–Mieszkowski 1986, Wilson 1986)). Small economies are proportionally more affected by the steady increase in capital mobility than the large countries. This is due to the fact, that outflow of certain amount of capital from a small economy could trigger more severe consequences for such state than the loss of the same amount of capital for a large country.

Gordon and Varian conclude that bigger countries may have some market power in the world capital market, which supports taxation of capital (Gordon–Varian 1989). Large jurisdictions, which have some monopsony power, are able to "export" part of its tax burden to non-residents in the form of their reduced after-tax returns to capital (Zodrow–Mieszkowski 1983). Thus, quite an intuitive conclusion would be that small countries, like New Member States, could improve national welfare by cutting CIT rates more than the big countries as the response from capital owners would be there higher. It seems, that at present those states follow this conclusion in reality.

Bucovetsky and Wilson show that a small country should tax only labor, which supply elasticity, unlike in case of capital supply, is finite (Bucovetsky–

Wilson 1991). Large regions on the other hand, which can influence the equilibrium of after-tax returns on capital, can tax capital on a source-basis.

Summarizing, small economies should keep the CIT burden on the low level. Therefore, countries belonging to the Old EU can tax corporations more heavily than smaller New Member States, which now happens in practice. Consequently, disparity in size of the economies is the following argument against full harmonization of CIT.

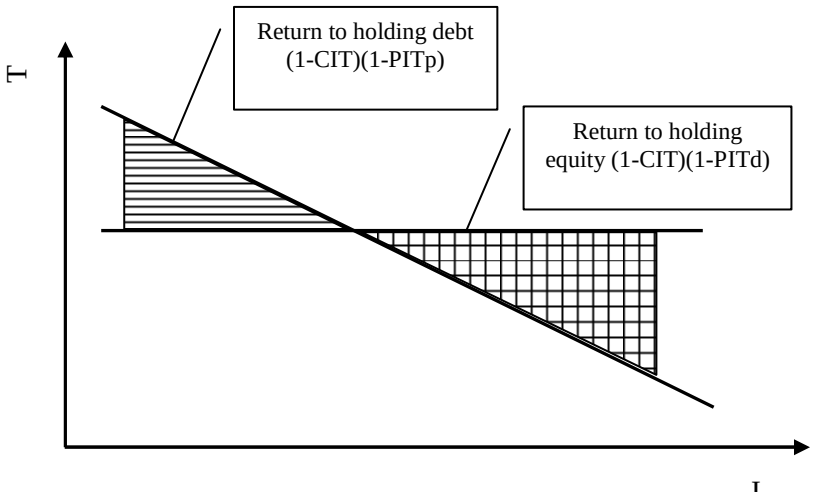
4. Labor taxation

A company, which as a rule is subject to CIT, is not the final income taxpayer. A company is always owned by individual or a group of individuals. Therefore, individual shareholders are always subject to double taxation both at the level of a company (with CIT) and at their own level (with PIT). It is worth considering the actual income tax burden of the individuals.

This relation partially explains Miller in his model (Miller 1977). The after-tax return from equity income is $(1 - CIT)(1 - PITd)$, where CIT is the corporate income tax rate and $PITd$ is the personal income tax rate imposed on dividends. If instead of dividends the investor derives income from debt, the net income would be $(1 - PITp)$, where $PITp$ is the progressive PIT rate. Thus, as long as the following inequation is met $(1 - CIT)(1 - PITd) > (1 - PITp)$ the investor should prefer to hold shares in a company rather than gain an interest income. Consequently, from this perspective the investor who takes a decision whether to buy shares or gain income from non-corporate sources should compare (i) the after-tax returns on investments in corporate sector (subject to CIT and subsequently PIT on dividend distribution) with (ii) the after-tax returns in non-corporate sector, which would be subject to progressive PIT tax rates but no CIT would be charged at any stage.

From purely tax point of view investments in non-corporate sector could be more profitable for the majority of population because most people are subject to low PIT rates as they are in low taxation brackets. However, a relatively small percentage of individuals with the highest income hold a significant number of shares in companies. Hence, as they are subject to high progressive PIT rates, they may prefer to derive income from corporate sources. The reasoning is shown on the below Figure.

Figure 3. Debt vs. equity investing under different income and PIT brackets of the taxpayer



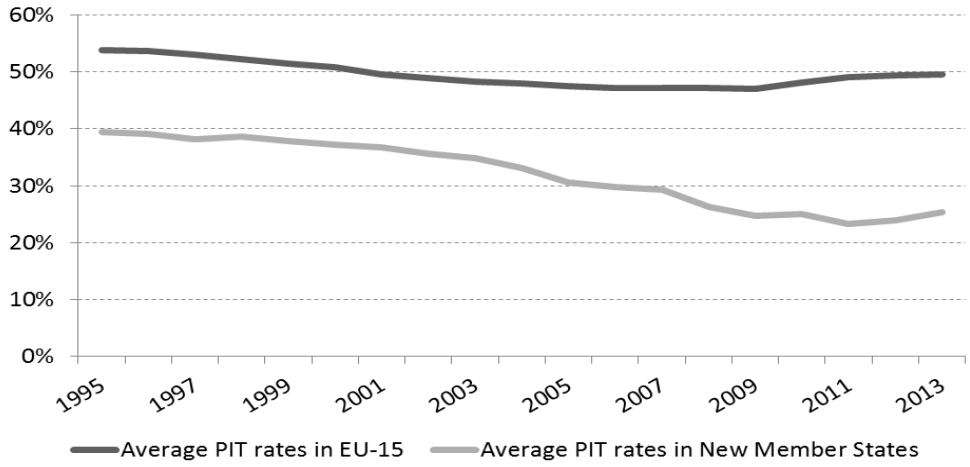
Source: Own construction based on Miller (1977)

Thus, more affluent people, who are subject to higher PIT rate brackets should prefer equity income, which is not taxed with progressive PIT rates (depicted by gridded field). However, those who earn less and are subject to lower progressive PIT rates should be better off if they do not invest in equity (depicted by the stripped field) but in debt instruments. Assuming that among EU-15 countries there are more affluent people, this partially explains the capacity of those countries to maintain higher CIT rates, which on the other hand may turn out to be too high for the New Member States (if full tax harmonization is executed) and significantly decrease the profitability of local companies.

The following reason supporting maintenance of the CIT wedge between the New Member States and the EU-15 is also disparity in the level of PIT rates. Namely, CIT is often seen as a part of progressive tax system and a backstop for PIT. The reason is that some taxpayers could choose whether to pay PIT or CIT, depending on what taxation system they perceive as more favorable to them. In the absence of CIT or with more favorable regulations of CIT than PIT those taxpayers, which pay PIT would feel incentive to incorporate to avoid income taxation. Consequently, the PIT revenues would erode and the income taxation practically would cease to exist. Thus, as evidence shows, the CIT rates are usually higher in countries, which impose high top PIT rates. Slemrod found in his cross country analysis a strong association between the top statutory CIT rate and the top statutory PIT rates (Slemrod

2004). Therefore, unification of CIT should be accompanied by harmonization of PIT. Otherwise too high CIT burden in low CIT countries (mostly New Member States), would erode there the taxation base, because entities would feel incentive to change their legal form in order to become PIT payers (which still could be lower). On the below graph is presented the development of the average top PIT rates for the EU-15 and the New Member Countries.

Figure 4. Average top PIT rates in EU-15 countries and New Member States



Source: Own construction based on data from Taxation Trends in the European Union 2013

Taking into consideration the above on average top PIT rates in the EU-15 are higher than among New Member States. Therefore, having in mind that PIT functions as a CIT backstop this is a following argument against unification of CIT across the whole EU.

5. Public goods

A tax in general is an enforced contribution without direct counter service. Naturally, so is also CIT. Therefore, any taxpayer should be interested in paying least possible taxes. Public goods are accessible to all free of charge. Hence, if taxes weren't obligatory, the free rider problem would arise i.e. taxpayers would feel no incentive to pay (indirectly) for public goods, as public goods are available for the whole society, also for those, who do not pay public contributions.

The Tiebout model assumes that different regions offer certain basket of goods at various prices (Tiebout 1956). Those goods are public goods and their availability corresponds to the taxation burden imposed by each tax jurisdiction. Given that (i) taxpayers have different preferences with respect to the scope of government services they require and (ii) the price they are ready to pay in form of taxes varies, they move between different tax jurisdictions. In course of the choice process of the taxpayers and through appropriate reactions to that choices of particular regions, economic agents and tax jurisdictions determine the equilibria in a number of countries where the taxpayers maximize their utility functions by moving to the tax jurisdiction, which they found most suitable. The model proposed by Tibeout was designed originally for individuals. Fischel, White and more recently Wellisch suggested, however, that the theory can be also easily adopted for multinational firms, which can change their residence according to their preferences depending on the mix of public goods and taxes (Fischel 1975, White 1975, Wellisch 2000).

Consequently, particular countries provide for different set of public goods. Therefore, although generally investors may be inclined to pay lower taxes, concurrently they are interested in usage of public goods, which are financed by those taxes and accessible only on the territory of that particular state. As a result, higher CIT is justified in the EU-15. Concurrently, if CIT was on the same level among the New Member States, the investors could resign from locating capital there.

6. Agglomeration externalities

The economic geography literature claims that companies focus on the size of host domestic market and take into consideration its density i.e. concentration of the demand around specific centers (Brakman et al. 2001). The key is thus the market potential connected with a particular location. Hence, the preferable choice are usually agglomerations, where investors could save on logistics and take advantage from agglomeration externalities. Those benefits include inter alia access to new technologies, well educated labor force, financial, social and political stability. To the extend this factors are financed from taxes, high taxes should not discourage investments but even attract FDI (Campbell 2005).

In high tax locations residents demand high level of public services and support elevated CIT as a financing source. Governments can impose high CIT in agglomerations, which would not trigger outflow of capital as the tax would be imposed largely on location-specific rents. Baldwin and Krugman claim that this holds for European area appointed by the triangle between London, Hamburg and Milan

(Baldwin–Krugman 2004). This means, that CIT should not discourage capital in these locations to flee.

Thus, governments – like those of Old EU – compensate investors for higher CIT (Slemrod 2004, Devereux et al. 2008). As investors perceive CIT as price for availability of agglomeration externalities, they will accept high income taxation. This is also the reason why they expect New Member States to keep CIT on the lower level. Unification of CIT may harm these states also from this perspective.

7. Richness of the societies

There are five commonly accepted features a good taxation system should meet. One of them is justice, which means that a good tax system should provide for just treatment of various economic agents. However, according to this idea justice is not exactly what it may seem. There is a concept of so called vertical justice, which states that parties capable of paying higher taxes should simply pay them.

Taking into consideration the above, imposing on entrepreneurs in different locations the same amount of CIT is not appropriate. Namely, EU-15 countries levy on average higher CIT burden than New Member States, because taxpayers in those countries are typically more affluent and therefore capable of paying proportionally more taxes (according to vertical justice concept).

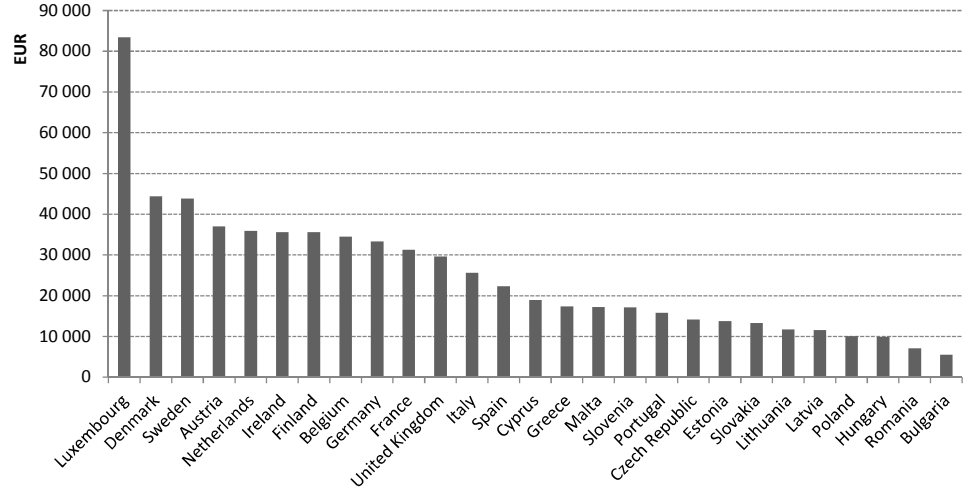
Moreover, people who earn more, save also more (Żyżyński 2009). Therefore, without major loss in their well-being they could bear more CIT (assuming that the economic cost of any tax – including CIT – is eventually born by individuals and not by companies, which was broadly discussed in the literature).

It should be underlined that CIT bear not the companies but their ultimate owner, which are individuals. The richness of residents of various EU countries is presented below.

Taking into consideration the above thirteen countries, where the GDP per inhabitant is highest belong to EU-15. The only exceptions are Greece and Portugal. However, still those states are in the middle of the stake. Importantly, the above Figure compares only the current incomes. However, if the total possessions were taken into consideration the discrepancy between an average EU-15 and New Member State resident would be even greater.

Consequently, the same tax for the whole EU would not be just according to the concept of good taxation system. The cost of tax should correspond to a particular economy of each Member State.

Figure 5. GDP in Euro per inhabitant in 2013



Source: Own construction based on data from Eurostat

8. Tax morale

Several researchers claim that most standard economic models fail to grasp the tax compliance of the taxpayers properly. In particular tax compliance cannot be explained solely by deterrence, risk aversion, tax burden or density of tax regulations. For example Alm et al. as well as Frey and Feld argue that most economic models assume too much tax evasion (Alm et al. 1992, Frey–Feld 2002). In fact several taxpayers do not even seek ways to evade taxes and cannot be seen as simple utility maximizers, although in certain situations omitting taxes could be more favorable to them.

Frey underlines that tax morality differs across countries (Frey 1997). He points inter alia social norms and societal institutions, which are important determinants of tax morality and vary between states. Therefore, assuming that tax morale is higher among Old EU, these countries are able to impose higher CIT burden with lower risk of tax evasion.

Torgler and Schneider found strong negative correlation between shadow economy (Torgler–Schneider 2007) and tax morale. According to their study the lower is tax morale, the more likely is that the shadow economy will be bigger. They claim that if taxpayers perceive government as helpful rather than wasteful, they tend to comply with own tax obligations and stay in the official sector. Shadow

economy differs in the EU and tends to be greater among New Member States. Assuming that the level of tax morale follows the size of shadow economy, this also supports the claim that CIT burden in the New Member Countries should be lower than among Old EU.

Abed and Gupta claimed that among former soviet states institutional weaknesses and corruption was one of the major obstacles to market reforms (Abed–Gupta 2002). If economic agents feel that they are cheated, the corruption is widespread and that they are not well protected by law, they are more inclined to be active in the informal sector and evade taxes. Hence, this also supports our hypothesis.

Religion also supports tax morale as it acts as a "supernatural police" (Anderson–Tollison 1992). Alm and Torgler found that higher church attendance leads to greater tax morality (Alm–Torgler 2006). Again, most post-communistic New Member States do not feature high religiosity.

Anyway, customs are very difficult to change. Taxes have a long tradition in the Old EU and local citizens appreciate it. In general state tax administration seems there also to be more responsive and less corrupted. Economic agents probably evade there taxes less than in Central Europe partially because they have higher tax morale. All these features, which however are difficult to measure, suggest that equalization of the corporate tax within the whole EU could be counterproductive. Even if the CIT burden is set on some medium level both the Old EU and New Member States might lose tax revenues but for different reasons – i.e. Western Europe because reduction of taxation and Central Europe because of increase of corruption and shadow economy in general.

9. Conclusion

Harmonization of CIT in the EU is recently on the agenda. It should contribute to a common market and ease the life for the multinational companies. However, potential harmonization of CIT will include also several consequences, which are far more reaching than taxation only. Economies of Member States differ significantly and may not be ready for a common taxation. In this article I tried to highlight several arguments, which support this hypothesis. Among them are inter alia such issues as: (i) requirement for capital, (ii) size of the economies, (iii) differences in labor taxation, (iv) set of public goods available to taxpayers, (v) agglomeration externalities, (vi) richness of societies or (vii) level of tax morale.

Introduction of CCCTB indeed could be appropriate solution for the whole EU. Surprisingly, it may even foster the tax competition, because comparison of corporate income taxation burden will be easier with a unified tax base. However,

taking into consideration different features of the economies of particular Member States, it seems that EU is not homogenous enough to adopt full CIT harmonization (i.e. including tax rate).

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7. Economic policy measures on the environment and energy sources for sustainability conflict in Romania

Andrea Csata

The paper describes sustainability conflicts created by some of the economic policies on environmental protection and to achieve a sustainable energy policy.

The present paper draws on the hypothesis that green energy projects create conflicts of sustainability by increasing the price of electricity, thus damaging the economy by decreasing the competitiveness of production factors and also creates social conflicts and other serious problems for exposed social strata.

This paper describes the first global aspects regarding the use of natural resources and energy, a short presentation of the European policies, country (Romania) and local level situations with special attention to the energy sector and environmental requirements. It describes the general framework of policies for the use of natural resources in Romania. The social and economic conflicts presented are related to broader conflicts concerning green energy, in particular wind energy. Although the objective of green energy projects is a very good one, as they have less negative impacts on the environment. However, these projects have also some disadvantages and may present inconveniences that might be disadvantageous in the long run. The economic aspects analysed here are: the structure of ownership of these investments and their way of subsidising the costs and benefits. From a social perspective the paper focuses on the positive side of these investments, their costs and social risks as well as on the measures taken by and the involvement of the Government and the effects brought by these measures. In the section related to environmental problems there will be discussed some of the negative effects of green-green and green investments. The paper relies on data given in formal agreements, contracts with European Union, statistical data from the National Institute for Statistics, National Agency in Energy and Government data.

Keywords: sustainability, economic policy, sustainability conflicts, natural resources, Environmental Kuznets Curve

1. Introduction

Creating a sustainable and safe environment for energy production is part of our daily preoccupations. This necessity for sustainability has become of vital importance due to recent succession of events which point out the weaknesses of current systems and energy supply. Some of the recent examples are the nuclear accident in

Fukushima in 2011 or actions taken by Russia which use energy supply to gain political and economic leverage.

The present paper aims to describe some of the social and economic conflicts that are brought about by economic policies that mean to create a strategy for sustainable energy policy. The topic of the paper is discussed from a rural point of view, specifically rural development thus economic policies are analyzed considering rural economy and the effects of economic energy policies on rural areas.

To verify our hypothesis the study analyses in detail two policies that have generated divergence in Romania, these being the green energy policy and the exploitation of natural resources (mineral, oils and shale gases). The analysis below is structured as follows: first the paper discusses the global situation followed by examples of sustainability conflicts on a global scale, then it moves on the situation in Romania describing in detail the sustainability conflicts in our country. As the topic of my doctoral dissertation concerns the sustainability of rural development, the problem will be presented from a national and local (rural areas) level.

2. Describing the global and European framework

On a global scale we can observe the same level of globalization in terms of energy as in any other economic sector. Global competitors can have influence through: natural resources or technology. As far as natural resources are concerned, some countries have a significant advantage over others – e.g. countries with large resources in oil and gases like Russia, Kazakhstan, Iran, etc. or mineral resources like China. The global market of these commodities shows a high dependency on these countries, the European Union being one of the largest importers of energy generating fuels, and largely depends on this market. Current technology used in everyday life and industry relies heavily on these resources. Developing new technology is a very slow process especially if investors are not motivated enough. The competitive advantage is, one the one hand, obtaining these resources, and on the other hand the technology used to exploit these resources. From this perspective, the global players are the USA in exploiting shale gases, China in making wind turbines and solar panels and Western European countries, like Germany who also have the capacity to make and export leading technology.

The International Agency for Energy predicts a massive increase of energy demand (with 50% more in 2030 compared to 2003). If the shift in technology doesn't occur this tendency will also present itself also in the case of oil demand which will rise by 46%. According to our present knowledge, if we continue to ex-

ploit oil reserves at the current rate, it will only last till 2040 and natural gases till 2070. Moreover, predictions indicate an economic growth which involves increased energy consumption. The International Agency for Energy (IEA) points out that global consumption between 2010 and 2020 should change faster towards using renewable energy sources and natural gases. Coal should remain an important source of energy covering one quarter of the world's primary energy needs (this resource should hold for another 200 years if exploited at the current rate). Recent geopolitical problems, the increasing demand, the growing inelasticity of refining capacity and increasing the states' resource reserves for crisis scenarios, have all lead to an increase of the prices. In these circumstances, the primary issue is stability and short term energy supply security meaning environmental sustainability.

Nuclear energy seemed to be a solid choice until the accident in Fukushima (Japan) in 2011. These events lead to massive reorientation of energy dependent countries towards renewable energy sources (especially Europe). The commitment of the EU towards having a competitive and clean energy is also motivated by climate change and the vision of a sustainable Europe can be found in the Europe 2020 strategy. The European Union policy on energy for the 2014-2020 period has three main objectives: Sustainability by reducing greenhouse gas emissions to reduce the global warming effect to only 2°C more than in the pre-industrial era. Competitivenessmeans to effectively implement the internal energy market and creating energy supply safety. As far as energy imports are concerned, the aim is to reduce EU's energetic dependency and to avoid supply disruption and possible energy crisis or insufficient supply in the future. The above mentioned objectives are described in the "20-20-20" targets, namely:

- reducing greenhouse gas emissions at EU level by at least 20% compared to 1990;
- increasing the use of renewable energy resources with up to 20% of the total energy consumption in the EU and up to 10%renewable bio-fuels of the total energy consumption in transport. For this reason a common framework has been created in order to promote renewable energy resources in order for the EU to achieve a 20% share for renewable energy from the total energy consumption by 2020;
- reducing basic energy consumption with 20%, by improving energy efficiency compared to the level achieved without these measures.

Another important EU objective proposes to reduce the level of greenhouse emissions with 30% by 2020 given that other developed countries will adopt similar objectives (EC 2010).

Moreover this change of policy favoring green energy deployment can be seen in the research conducted by the European Wind Energy Association, which indicates that between 2000-2013 the dominating source of green energy installed was wind energy followed closely by natural gas.

3. Theoretical framework on sustainability conflicts

It is an obvious reality that achieving sustainability has its limitations, economic sustainability and sustainable economic policies are both hard to achieve. Some important arguments are described by Antal (2004): on the one hand, it is doubtful that debts even below 60% are sustainable, on the other hand, maturing debts can cause tensions if these are to be paid from important social funds. Once the national currency depreciates, government debt increases, even if severe restrictions and budget cuts are appliedit may not reduce the debt to a desired level. If these measures affect purchasing power (the wage cut of public servants by 25% or the increase of energy prices), these reduce consumption affecting economic growth. Attracting foreign capital and investments will not transform directly into debt, but revenues from these are easily repatriated and obligations contracted by the government need to be fulfilled which may be hard to achieve (a typical case is the implementation of green certificates).

Simon Kuznets (1955) in his work „Economic Growth and Income Inequality" analyzed the relationship between economic growth and economic inequality and illustrated it with help of a curve. His hypothesis is that once an economy develops, the GDP after peaking will lead to a higher level of national income and as a direct effect economic inequality decreases. Based on the analogy of this idea the environmental Kuznets curve was formulated (Grossman–Krueger 1995).

Agras and Chapman (1999) categorize the influencing factors of the environmental Kuznets curve. In case of developing economies, if the GDP grows the environment deteriorates, while in case of developed economies GDP growth has a positive effect conom environment.

This means that some of the factors listed below have a positive effect conom GDP but they have a negative impact conom environment. These factors are the following: export-led growth and industrialization, as well as declining energy prices. The opposite effect occurs with increasing imports. Energy efficiency development in conjunction with environmental protection policies have a positive effect conomy the GDP and the environment.

The GDP growth will have a positive effect conom environment once energy efficiency is implemented and the principle is applied. Both developed and developing countries have environmental policies.

Sustainability conflicts may arise from specific investments which endanger local biodiversity or the natural habitat of some species. This case is also described by Hoexter (2012), where he discusses about the natural habitat of condors affected by windmills.

On the other hand, conflicts may arise from applying energy policies to certain levels of economic policy and it may also affect national, local and intermediate policies (Byrnea et al. 2007). Another energy conflict in the United Kingdom, described by Upreti (2004) focuses on the social dimensions of development of biomass power plants, based on the four case studies from England and Wales. The paper examines impacts of public oppositions on planning permission because local communities value environmental benefits of biomass energy; they are more concerned about the immediate negative local effects of power plants on their respective regions. Main sources of conflict over biomass energy development were related to location of the plant, perceived risks, and negative effects to ecology and landscape compared to few economic benefits to local people. The author also mentions problems related to the implementation of these policies, namely, the stakeholders'feeling of injustice, weak public relation strategy of the developers and low level of awareness.

A similar sustainability conflict which is relevant from our perspective is the conflict generated by the water used for producing green energy – "blue impacts of green energy" (de Fraiture et al. 2008).The authors point out the possibility that biomass production for energy will compete with food crops for scarce land and water resources, already a major constraint on agricultural production in many parts of the world.

Furthermore, another frequently described conflict with various manifestations is the high price of green energy. For now, we can say that with the exception of hydroelectric dams the production costs of electric energy in power plants which use renewable energy sourcesare currently superior to thosethat use fossil and nuclear fuel. The use of these resources and the attraction of investors in renewable energy production are motivated by state aids conform to the EU practices and measures which eventually lead to an increased energy price for the end user. Thus, they have a negative impact on competitiveness. The energy being used by the industry has an inflationary effect and diverts demand structure and this results in less money for other goods in households. In their article Carbaugh–St. Brown (2012) mention the trade conflict between different countries, especially conflicts between USA, China and Europe. Thepaper discusses the relationship between industrial policy and trade

disputes in renewable energy which arise when governments use industrial policy to promote the development of new industries and the creation and adoption of new technologies. The green energy policy involves subsidies granted to producers and consumers, usually for the purpose of correcting a market failure. Concerning renewable energies such as wind energy and solar energy China, United States, and the European Union provide extensive support to producers and consumers and this support has resulted in trade frictions among these nations.

4. Energy policy in Romania

The legislative approximation in Romania has been achieved gradually. The first important step was the Government Decision no. 644/2005 which foresaw an energy market opening of 83.5% and in November 2005 the green certificate market was introduced. The legal framework for the total opening of the energy and natural gas markets was made possible by the GD no. 638/2007. From the perspective of legislative approximation of the European 2020 strategy, meaning a 20% increase of renewable energy sources from the total energy consumption and a 10% increase in renewable biofuel in transportation. In order to achieve this target, national mandatory objectives are set for each member state. For Romania, the national target is 24%, to be achieved by 2020. This objective was already accomplished last year in a record time – implementing the green energy system which produces 24% of the necessary energy was subsidized by green certificates paid directly by the end users. Due to this generous policy, which favours green energy investors, this sector was the most attractive in Romania, resulting in over 3 billion euros invested in this sector.

The most important investments were not made by the local actors, but by international investors like the Czechs (CEZ group) who invested 1.1 billion euros last year in a wind farm consisting of 240 wind turbines, this being the largest investment of its kind in Europe. The Italians (ENEL) invested over 400 million euros in order to take advantage of one of the most generous subsidies. Energias de Portugal or other companies with massive investments in the Romanian energy market.

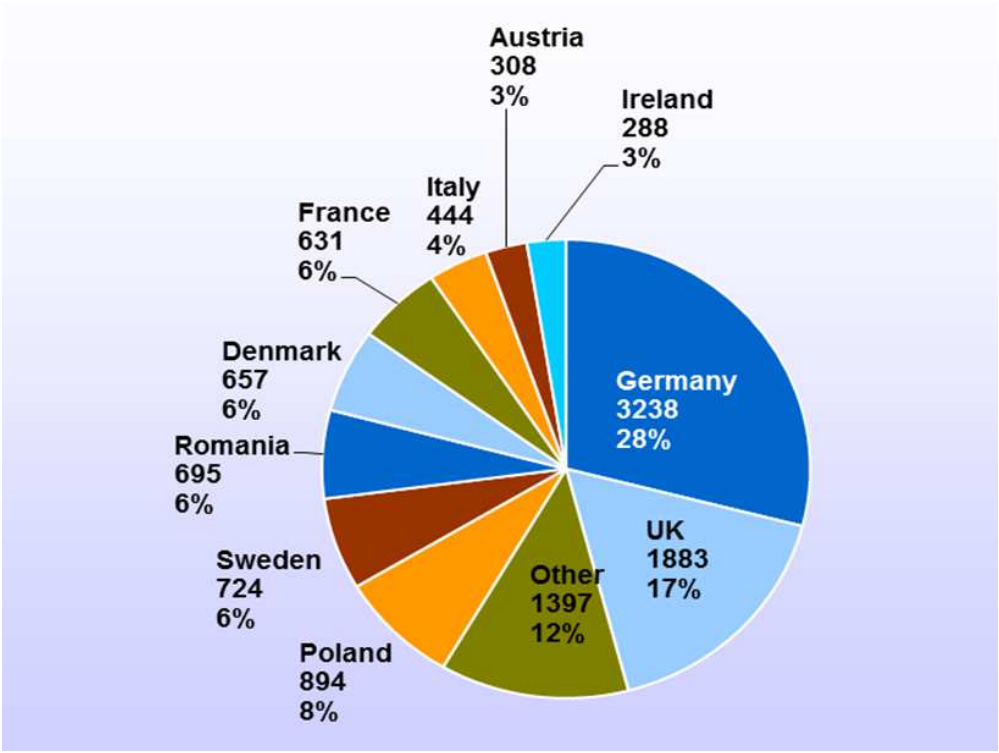
It can be observed that the exploitation of natural resources is in most cases left to foreign companies due to the lack of competitiveness of local companies. This outsourcing process of natural resources exploitation triggered two major public impacts. The exploitation of gold resources was outsourced to a Canadian firm which proposed an exploitation technology using potassium cyanide.

The subject of another controversy was Snake Island (Black Sea). From the moment of winning the trial with Ukraine regarding the area rich in conventional re-

sources (like oil) to be exploited, these areas had already been outsourced to foreign companies in exchange for very little benefits.

Romania has doubled its capacity to produce wind energy compared to 2012. This way Romania is among the first 10 countries who invested in wind energy. The biggest investments were made by Germany and the UK, Romanian occupying the 5th position in the European Union (6% of the total investment being made in Romania).

Figure 1. EU member state market shares for new capacity installed during 2013 in mw. total 11 159 mw



Source: The European Wind Energy Association (2014, p. 5.)

Due to this massive investment increase in wind energy and other green energies with the help of green certificates, a massive increase in prices has been experienced, especially at household level. The price of electricity was 0.105 euros/ KWh in 2012 and it increased to 0.135 euros/ KWh in 2013 this being one of the largest increase ever recorded. Unfortunately, this increase of the electricity price didn't

happen in a favourable economic environment, meaning that the incomes didn't follow the same upward trajectory. Similar increase could be observed in other countries as well, such as Germany, but the buying power and incomes in this country are significantly larger. One positive aspect of this is that the price of electricity remained basically the same for industrial consumers. If green certificates had been applied entirely, this increase would have been even higher, but in mid-2013 a part of the green certificate payments were delayed and rescheduled after 2017. This process is part of the total liberalization process of electric energy markets and includes not only the increase of electric energy prices but also that of natural gases from 49,8 RON/MWh (1 July 2013) to 119 RON/MWh (1 October 2018). These prices have been increasing every three months with dynamic quotas for industrial manufacturers as well as households. The highest increase of energy price among the EU member states occurred in Romania between 2011-2013 (from 0,108 euro to 0,132 euro/KWh). Although this price is below the European average the increase had a negative effect conom Romanian population because it took place simultaneously with the decline of wages and purchasing power.

Households and industrial consumers are the two most affected market segments. As Table 1 (Romanian Prognosis Comission) shows, these two market segments represent 65,4% of end users and they are predicted to experience further increase in the near future and that this process will stabilize along with the achievement of energy cogeneration objectives.

Table 1. The structure of end user energy consumption in Romania 2009-2020 (%)

Indicators	2009	2010	2011	2012	2013	2014	2015	2020
End user energy consumption, out of which	100	100	100	100	100	100	100	100
Household energy consumption	35,9	35,7	35,5	35,6	35,4	35	34,5	31,9
Economy-wide level consumption	64,1	64,3	64,5	64,4	64,6	65	65,5	68,1
Industry	27,8	29,1	29,9	29,9	30	30,4	30,8	32,5
Constructions	1,8	1,8	1,8	1,8	1,9	1,9	2	2,4
Agriculture, forestry, fishing	1,7	1,7	1,7	1,7	1,7	1,7	1,7	2
Transport and communication	24	22,5	22,1	22	22	22	22	22,1
Other economic sectors	8,8	9,2	9	9	9	9	9	9,1

Source: Comisia Națională de Prognoză (2012, p. 10.)

This is important because as it is mentioned in the Romanian partnership agreement (p. 12.) Romania ranks among the EU Member States with the highest share in GDP of industry (29%) and agriculture (6,6%) and one of the lowest share of Business Activities and financial services (15,3%). Thus the price of electricity for industrial consumers is very important.

Some important aspects regarding energy consumption in Romania: according to the data provided by the Ministry of Industries basic energy consumption increased between 1999-2008 by 8,2% which is lower than the gross national product in the same period (23,9%). It has been noticed that Romania also faces the separation of economic growth and the rise of electricity prices. This is a phenomenon present in all developed countries starting from the period after the first oil crisis, and this process can be also found in the data provided by the Romanian Prognosis Comission on energetic intensity (Table 2).

Table 2. Energetic intensity indicators (tep/1000 euro 2008)

Indicators	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2020**
GDP (billion euro 2008, constant prices)	130,6	128,4	131,6	133,7	137,8	142,7	148,3	175,7
Total energy intensity (total energy supply per GDP)	0,3	0,3	0,3	0,4	0,3	0,3	0,3	0,3
Primary energy intensity (primary energy supply per GDP)	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,3
Domestic energy intensity (domestic energy consumption per GDP)	0,3	0,3	0,3	0,3	0,3	0,3	0,3	0,2
End user energy intensity (end user energy consumption per GDP)	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2

Source: Comisia Națională de Prognoză (2012, p. 11.)

Green energies are subsidized directly, the amount being calculated according to the quantity of energy used. We, as consumers, pay for the manufacturersforthe green certificates appearing on the invoices of the products we buy, we also pay for high efficiency cogeneration (by which consumers actually subsidize technological development) and from this year we pay for regulated compensatory, i.e. for possible losses suffered by producers from trading in the free market. These payments appear as consumer taxes as they are calculated on the basis consumption. For the moment there is no risk of price competitiveness in the industry but on a long-term

basis, increasing prices may seriously affect the economy and there might appear the risk of de-industrialization of the country. The Romanian Partnership Agreement contains an analysis of the country's competitiveness, and the table below supports what has been said before by showing those indicators that are connected to the energetic sector.

In the Romanian energetic sector there are two major problems that need to be solved in the near future: on the one hand, the large number of depreciated assets, the modernization of energy transportation and storage; on the other hand, energy infrastructure, especially green energy, should be developed and broadened in order that our country be able to export the generated energy surplus.

For what regards green energy, the following problems and possible conflicts can be observed: a systematic problem connected to our accession to the European Union and the harmonization of the legal and economic frameworks is that the contracts and agreements between our country and the EU as well as the legislation harmonization does not properly account for the country's economic development and the possible changes in trajectory of the local and global economy. There is no framework that would allow for changes in case of agreements and contracts. Changes should be allowed and applying such changes should be related to social and economic factors. In this case, for example, green certificates could be introduced on account of income increase or the two could be adjusted somehow. There are no "if" clauses linked to real economic and social changes.

Table 3. Romania Competitiveness Scoreboard – Distance from EU Average (standard deviations)

	-3	**-2**	**-1**	**0**	**+1**	**+2**	**+3**
Innovative Industrial Policy							
Labour productivity per hour worked (2010)		X					
Sustainable industry							
Energy intensity in industry and The energy sector (2010)	X						
Environmental Protection expenditurein Europe (2009)						X	
Exports of environmental goods (2011)			X				
Service Sectors							
Electricity prices for medium size enterprises (2011)							

Source: Ministry of European Funds (2013, pp. 11-12.)

At the macroeconomic level: the present green energy subsidizing system introduces, in fact, double taxation: on the consumed electricity (on green energy and efficient energy cogeneration) and we also pay VAT on these, in other words we pay double consumer taxes – we pay for the producer and we pay for the government a

VAT for subsidizing green energy producers. Moreover, we can even say that we pay triple tax because manufacturers include the electricity prices in the price of the given product we buy. As electricity prices increase the government's income will also go up due to the double taxation described above. This seems to be a downward spiral which will destroy the economy. It will generate inflation, will reduce the real income of consumers, it will reduce the consumption all which will result in bankruptcies, the rise of unemployment rate and an income decrease.

Up till now, the increase of electricity prices were adjusted to the inflation rate and now inflation is brought about by rising energy prices.

Another problem generated by these investments is that they mean neither an economic backward nor an economic forwardbecause it requires workforce only at the installation phase (and the equipment is imported from Western Europe and China) and afterwards it functions with minimum personnel: a guard, a mechanic and an administrator. After energy plants are constructed the energy doesn't need to be "transported" and it doesn't link to any other sector or transfer its excess costs. Thus, it doesn't generate economic growth.

At the microeconomic level: our life could be described using an astrological metaphor: we are the microeconomic planet, our sun is our income which we work for, our moons which affect us daily are the exchange rates of currency, electricity bills and fuel prices. The effects of these three "moons" are felt in every aspect of our daily lives and any change is paid by us, as we are the end users. Our worst fear is total eclipse, meaning the simultaneous rise of electricity price, exchange rate and fuel price and all these will use up all of our income and leave nothing from our salary after we paid our bills and we bought the necessary items. Unfortunately, those with average or below national average level of income have a consumer basket containing only the elements influenced by our "moons" (food, electricity, fuel).

At the rural area level, the most affected social strata is composed of those with low income and living in poor social conditions, rural areas being characterized by low income population. The increase of electricity prices due to green energy leads to a heightened risk of poverty and to social exclusion.

Some proposed solution would the following:

- One of the first and easiest solutions would be not to apply VAT to green certificates or high efficiency cogeneration. Thus, the price paid by us would slightly decrease and we wouldn't be subjects to double taxation. This depends on the government and could be easily applied as we pay the radio and TV tax with no VAT applied to it. Not applying VAT to green energy would stop double taxation and would be one of the fastest solutions available at the present moment.

- Setting the limits of green certificate prices (inferior and superior limits) would be beneficial for both consumers and investors. Consumers wouldn't pay more than the maximum limit and investors would surely benefit from a minimum subsidy, so it would be easier to predict the functioning of these firms. However, these limits should be respected; otherwise investors would face an unforeseeable situation.
- The increase of electricity prices should be rescheduled according to the growth of the population's real income. For this reason, Romania should collaborate with Bulgaria (where the government was forced to resign due to the forced increase of energy prices) and other countries facing the same problems, in order to renegotiate the conditions imposed by the EU. The rise of electricity prices should be adjusted to income levels, especially since we achieved the proposed target.
- An idealistic objective is to benefit from these resources. For example: shares from the state companies producing green energy. We could have a special investment fund where we get shares according to how much we paid for green energy or a fix monthly amount (thus we would have equal chances, protecting the vulnerable strata of society). This fund could be financed by state energy companies' profits or revenues. This country has exploitable resources and we could receive revenues from the exploitation of the resources. If these resources are to be invested the long term effects are positive, but the profitability will not occur from one day to another and the problems needs to be solved faster. Thus, the resources need to be divided and a part of the revenues should become subsidies of this kind. This way we can compensate the rise of prices directly just like the money which is taken directly from us by the electricity bills.
- Local level solution would mean investment in green energy in the public sector (city and county councils) and the profits from these investments should redistributed by reducing local taxes. The problem is that city and county councils also lack funding, with the decrease of household incomes and companies' profits lead to a drop in the local authorities' income. Thus, very few will be able to invest in green energy. These investment for the public sector should be financed entirely (for example street lighting with green energy – it would mean a lower cost for the town hall and they could impose lower local taxes). In order to be achieved, these should be introduced among the 2014-2020 priorities and the state should grant enough resources.
- The Ministry of Industry proposes that exposed social strata should benefit from state aids to partially cover their electricity payments

- Possible solutions offered by the Ministry of Justice for rural areas include counselling, thermal insulation, modern stoves (which are considered too expensive, thus less accessible and the procurement of which would require subsidies), street lighting with green or alternative energy resource to ensure reduced consumption. The use of biomass seems to be an achievable factor also in rural areas especially space and water heating.
- Small hydropower plants appear to be another potential investment in rural areas (accessible for a limited number of market segments). With regards to small hydropower plants, a possible conflicting situation might arise (already present at some investments), namely not taking into account the natural environment, inadequate and/or insufficient measures are taken regarding the water's flora and fauna, or environment protection (for example non-functional fish ladders).
- In areas with geothermal energy capacity, these can also be exploited – using geothermal water as an energy resource – however, they require big investments.

5. Conclusions

The paper discusses issues related to sustainability conflicts and highlights the possible conflicts among different sustainability principles. The present case study analyzes the conflict created by green energy investments in Romania, in other words how green energy subsidies have had a negative impact conom society and economy. By implementing some energy policies Romania has done some important steps towards achieving cleaner energy and ensuring the country's energetic safety. The measures, the present paper analysed, were the green energy subsidies through direct payments by the end users. These massive subsidies have attracted big investments in this sector reaching the target of ensuring 24% of the energy need on a country level by the end of 2013.

This process resulted in several sustainability conflicts: steps taken to ensure a clean environment and a greener energy from renewable resources have led to unfortunate economic and social effects. Negative conomyic effects are the inflationary pressures caused by increased prices, reduced consumption and on the long run the decreased competitiveness of companies and of the industry in general. At the social level increases the risk of impoverishment and social exclusion, the most affected social strata consisting of those with low income rates and rural areas. Certain situations proved that the natural environment and habitat can also suffer from green energy investments.

In the next phase of the research I will attempt to quantify the effects of economic policies related to the energy sector, with special attention to rural areas.

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Part two:
Enterprises and Micro Policies

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8. State-owned enterprises in Russia − The origin, importance and principles of operation[1]

Paweł Augustynowicz

The aim of this paper is to analyse the state enterprise sector in Russia in terms of its origin, economic significance, principles of operation and efficiency. State-owned enterprises (SOEs) and those dependent on the state – constituting about 30–40% of the full potential of the Russian economy – are particularly strongly represented within the largest Russian companies, in sectors defined as strategic. Therefore, the classification, legal basis and forms of the above-mentioned enterprises will be analysed. It appears that Russian state-owned enterprises operate according to an entirely different set of rules than companies in developed countries and this situation is likely to be intentional.

This study will be conducted on the basis of official statistics, a few empirical studies and the analysis of international literature (mainly contained in the various studies conducted by organisations such as the OECD and the World Bank). The following analyses will be carried out: the analysis of legal acts concerning SOEs in Russia, the presence of SOEs will be analysed across the ranking list of the largest Russian companies (including the Top 400 list). Studies of scientific papers in Russian and English will also be carried out.

Knowledge on the functioning of the Russian state-owned enterprises and information about the model of corporate governance used in this country (corporate governance of the country) are very limited. Moreover, in papers by various authors one can find ambiguous or even contradictory opinions. This results mostly from differences in the assumptions and definitions, or simply from the use of unreliable / incomplete data. The author expects that this paper will result in the creation of a clear, dependable and objective image of the Russian state-owned enterprise sector.

During the past twenty years of the Russian transformation there have been two opposite processes in the field of state property. The first one is privatisation and the second one is the process of strengthening the presence of the state in certain branches of the Russian economy. These two processes will be analyzed in this paper. This analysis will clearly show that despite a huge decline in the SOE sector after the transformation, this sector is still very significant to the Russian economy. Moreover, these enterprises play a crucial role, since they are concentrated in the most strategic sectors, and are more profitable and have other competitive advantages over private enterprises.

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Keywords: State-owned enterprise, Russia, strategic sectors

1. Introduction

Even after twenty years from the collapse of the socialist regime the state is still very strongly present in the Russian economy. This has a vast impact on both the regulatory and institutional, as well as ownership areas. State-owned enterprises (also dependent on the state) have a dominant share in some of the largest Russian companies. They also play a very crucial role in many strategic industries (see Table 1 below). The Russian economy and the Chinese one, are the only major economies in the world, in which state enterprises are so important.

Table 1. The structure of privatised enterprises by form of state ownership in the period 1993-2011

Year	Number of privatised enterprises - total	Including, by form of state ownership		
		Federal	Local	Municipal
1993	42924	7063	9521	26340
1994	21905	5685	5112	11108
1995	10152	1875	1317	6960
1996	4997	928	715	3354
1997	2743	374	548	1821
1998	2129	264	321	1544
1999	1536	104	298	1134
2000	2274	170	274	1830
2001	2287	125	231	1931
2002	2557	86	226	2245
2003	434	161	152	121
2004	502	121	246	135
2005	491	112	226	153
2006	444	98	254	92
2007	302	73	115	114
2008	260	26	135	99
2009	366	140	87	139
2010	217	97	56	64
2011	276	119	80	77

Source: Own calculation based on (Goskomstat 2004, 2005), Tables 13.10 and 13.11.

The role, scope and current way of functioning of SOEs in Russia is unique, not only among the largest economies in the world, but also among the group of post-socialist countries, where the dominance of state ownership was a natural feature of the previous economic system. Russia, because of its distinctiveness (that re-

sulted from its size and geographical location, wealth in natural resources and imperial ambitions), has always followed a specific economic policy. The tradition of the state as the main guardian of the economy, also in terms of ownership, has in Russia a long and established position.

After changing its political and economic systems in the early 1990s, the Russian economy, like other post-socialist economies, experienced a period of rapid and spontaneous privatisation. As a result, there was a rise of the whole new sector of formally private enterprises, that often had their majority stakes owned by the private capital and the minority stakes owned by the state capital. Nonetheless, these enterprises were still highly dependent on state policy. However, after a few years even these highly controversial privatisations were halted. Since 2005, Russia has increased the share of the state sector in the economy (EBRD 2009).

Both in the English and Russian literature there are only a few significant publications containing the analysis of the state enterprise sector in Russia and corporate governance issues of the state. Papers dated 2000–2005 (based mainly on the data from the 1990s) are now rather obsolete and outdated. Furthermore, they often contain contradictory results regarding both the scale and efficiency of state enterprises in Russia. Russian studies in general positively evaluate the process of change in ownership and the resulting efficiency of the private sector in the 1990s (Степашин 2004, Радыгин–Мальгинов 2001). The existence and functioning of the state enterprise sector in this period has been considered as having had a negative impact on the economy. These statements are not consistent with the conclusions of researchers from outside Russia, where the efficiency of both public and private sectors in the 1990s in the Russian economy has been severely criticised (Perevalov et al. 2000).

Recent studies on the functioning of state-owned enterprises also provide conflicting data. An econometric analysis shows a significant positive effect of state ownership on the quality of corporate governance in Russia in 2001−2004 (Yakovlev 2008). This can be explained by the change in government policy in the sphere of privatisation and state property management, which took place after 2000 (Yakovlev 2011). Other data indicate a positive impact of state capital on the quality of corporate governance in this period (Avdasheva 2007). A number of studies represent a distinct view, providing an extensive list of arguments that point to a lower efficiency and poor corporate-governance practices in Russian enterprises. Sprenger (2010) presents a review of literature in this area and a set of arguments about the unreliability of the state as an owner within the Russian economy.

These conclusions are confirmed by the recent Western publications concerning the analysis of the transformation processes. The state is generally considered as a poor owner in post-socialist economies (Estrin et al. 2009, pp. 699-728., Hanousek

et al. 2009, pp. 43-73.). Note, however, that these claims are based on data from smaller countries, with a slightly different history, such as the Czech Republic, Hungary and Poland. Therefore, one can doubt, whether it is possible to generalise the theory to cover this very special case of the Russian economy.

2. The definition and classification of SOEs in Russia

There is no unified definition of a state-owned enterprise in Russia, neither in official documents, nor in the scientific literature. This term can denote a whole spectrum of entities. It can be given to enterprises with 100 percent share of the state capital, as well as to entities with majority shareholdings, and to firms with minority state shareholding that still allows it to enjoy actual corporate-governance rights.

The legal basis for the functioning of state enterprises in the modern Russian economy is regulated by a number of different acts. The Civil Code of the Russian Federation lists three possible legal forms of enterprises:

1. The biggest enterprises from the public domain are mainly *joint-stock companies* (so-called open companies). This legal form provides the private capital with the opportunity to take a share in the ownership, as well as with the ability to conquer foreign stock-exchange markets.
2. *Unitary enterprise* is a specific form of organisation and operation of enterprises with 100 percent state ownership in Russia. Unitary enterprises do not own any property that still belongs to the state, as represented by the federal, regional (republics, oblasts, etc.) or local (in the case of municipal enterprises) entities. Unitary enterprises are liable for their obligations in respect of all the assets that cannot be divided into shares or equity – they always remain owned by the state. Business managers of unitary enterprises have to obtain approvals for most of their decisions. This often results in the emergence of allegations against "manual control" applied to these enterprises.
3. Another specific product of the Russian state property-management model are *state corporations*, which are partly business entities and partly state agencies (non-profit organisations). The legal basis for the creation of state corporations has existed since 1999. Each of these operates under a separate law. Therefore, they have very little in common. Generally, one can say that these companies:
   - are relatively independent from the state-owner;
   - are the sole owners of their assets;
   - have limited disclosure obligations to the state.

3. The size of SOE sector in Russia and it's change over time

The SOE sector within the Russian economy was an object of significant and unprecedented changes during the transformation period. Russian policymakers decided to apply a fairly radical approach to change, which implied a rapid change in ownership within the economy. An in-depth analysis of these events in the most turbulent period of the privatisation process (in 1991−1994) is virtually impossible due to the fact, that there is almost no official statistics on the said period.

The first spontaneous processes of privatisation in the Russian economy could already be observed in 1991. However, at the end of that year, the structure of the economy still had a negligible share of the private property. By the end of 1991, the share of private ownership in the economy had reached 4.2% (Степашин 2004, p. 82.).

According to the Central Statistical Office of the Russian Federation, befor the start of the rapid privatisation, the state of SOEs was as follows:

- 349.3 thousand of state-owned enterprises belonging to all levels of government (national, federal, and municipal) with total assets valued at 35.6 billion rubles;
- 80.1 thousand of non-business organisations with total assets valued at 24.1 billion rubles (Goskomstat 1992).

These data suggest that the value of the state property, that could hypothetically be privatised, amounted to 35.6 billion rubles. However, this approach is too simplified, since companies in the Soviet Union had a completely different nature, and even the definition of an enterprise was far from the definition accepted by today's market economy. Therefore, not all of the nearly 350 thousand companies could be called companies. In contrast, a number of organisations (among the abovementioned 80 thousand that were categorised as non-enterprise entities) could have features specific to a typical enterprise. This applies to many holiday resorts and social facilities belonging to different types of departments of the state apparatus. In subsequent years, these units had been separated from their parent units and successfully became the subject of privatisation proceedings.

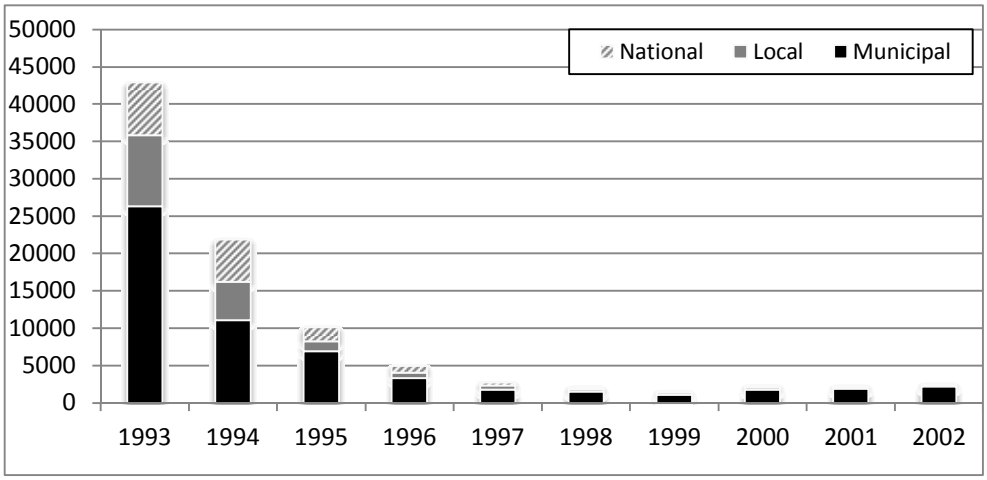
The acceleration of the privatisation process can be associated with the enactment of two documents important from the perspective of the process:

- The Ordinance on the introduction of the system of privatisation vouchers in the Russian Federation (dated 14 August 1992);
- The Ordinance on the expansion of the system of privatisation vouchers in the Russian Federation (of 14 October 1992).

The above-mentioned regulations allowed for non-monetary methods of privatisation. Namely, they introduced vouchers (also known as privatisation certificates) as a means of settlement in privatisation transactions. The moment of introduction of these laws could be considered as the beginning of mass privatisation and decline in the SOE sector in Russia.

The scarce data from the beginning of the privatisation period mentions about 36.8 thousand state-owned enterprises privatised in 1991−1992, while in 1993 this number amounted to 42.9 thousand and dropped to 21.9 thousand in 1994. As shown in Figure 1, the years 1993 and 1994 were particularly abundant in privatisation transactions, while in 1995−1997 the number of privatisations fell, and in subsequent years it remained at a relatively low level.

Figure 1. The structure of the privatised companies by form of state ownership, 1993-2002

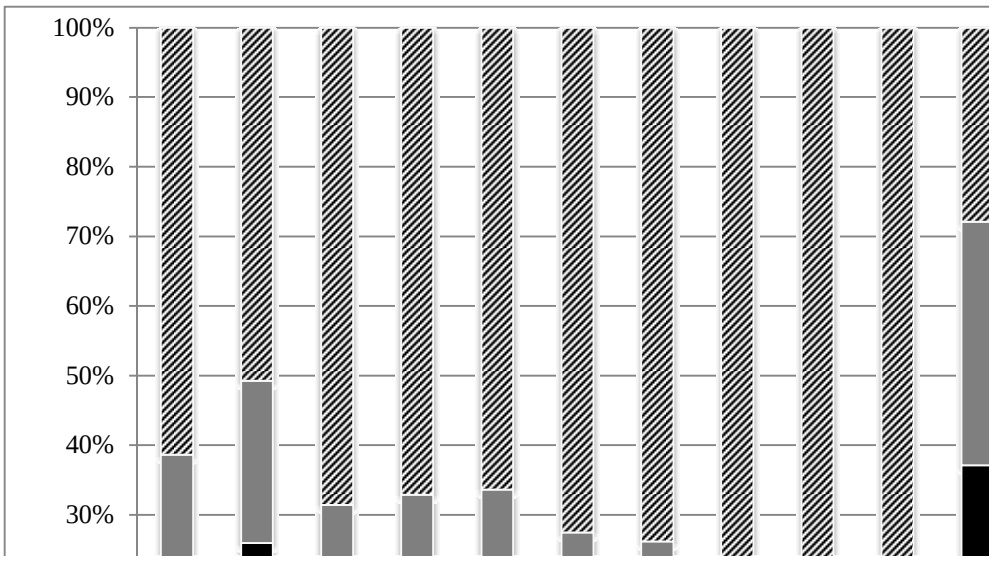


Source: Own calculation based on (Goskomstat 2004, 2005), Tables 13.10 and 13.11.

Table 1 shows the details of the number of enterprises privatised between 1993 and 2011, broken down by various forms of ownership before privatisation. A sharp decline in the number of enterprises privatised in 2003 may be noted. Data broken down by form of ownership show that this decline was associated with a shrinkage in the number of privatised enterprises owned by the Municipality (from 2,245 in 2002 to 121 in 2003).

Figure 2 shows the share of municipal, local and federal forms of ownership in the structure of enterprises privatised in selected years. In the period 1993−2002 municipal enterprises were by far the largest group, which accounted for more than half of all the privatised enterprises. In the years 2002−2011 the share of municipal enterprises was much smaller. In 2004−2008 companies owned by local governments took the lead, and in the years 2009−2011 the majority of privatisation transactions applied to federal enterprises. This division reflects the different strategies of privatisation across these years. Municipal enterprises definitely comprise the largest group, but they are very small entities. By contrast, federal companies were generally much larger units, most of which were sold out in 1992–1995 (see Table 1).

Figure 2. The share of the different forms of state ownership in the structure of privatised enterprises between 1993-2011



Source: Own calculation based on (Goskomstat 2004, 2005), Tables 13.10, 13.11; and (Goskomstat 2012), Table 13.10.

One of the natural consequences of changes in the ownership structure of the economy of Russia is the change in the employment structure. Table 2 contains data on the employment within the Russian economy (and in the case of the period 1970−1990 in the economy of the USSR). It is worth noting that − according to official Figures − certain activities in the USSR were treated as employment in the private sector.

Table 2. The structure of employment in the Russian and former Soviet Union economy in years 1970−2010 by type of ownership, in%

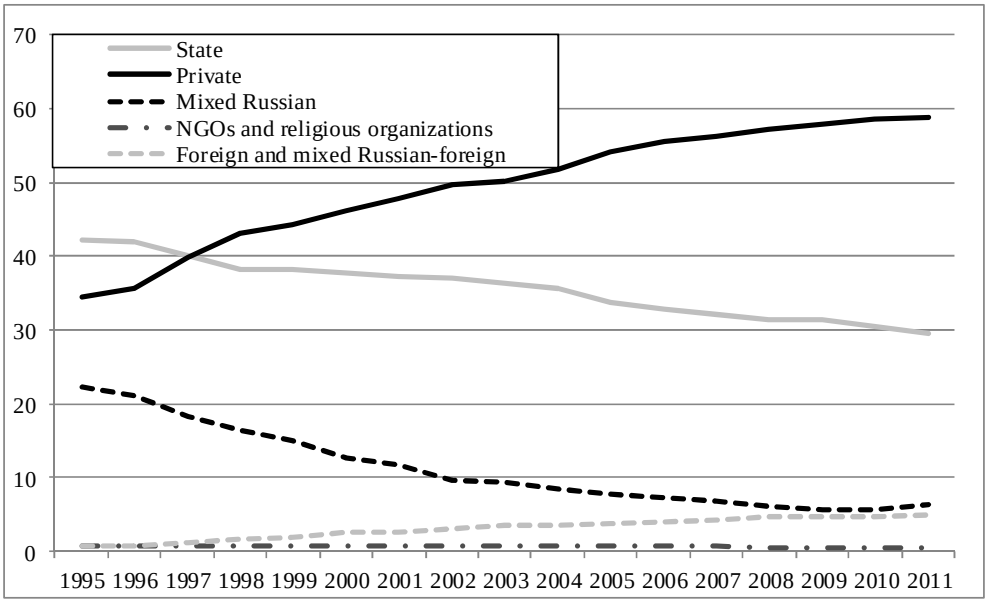
Type of ownership	1970	1975	1980	1985	1990	1995	2000	2005	2010
State	86	88.8	90.4	91.1	82.6	42.1	37.8	33.7	30.4
Private	14	11.2	9.6	8.9	12.5	34.4	46.1	54.1	58.6
Mixed Russian	...	...	...	...	4.0	22.2	12.6	7.8	5.7
NGOs and religious organisations	...	...	...	...	0.8	0.7	0.8	0.6	0.5
Foreign and mixed Russian-foreign	...	...	...	...	0.1	0.6	2.7	3.8	4.8
Total within the Russian economy	100	100	100	100	100	100	100	100	100

Source: Own calculations based on (Goskomstat 2003) Table 6.5; (Goskomstat 2007) Table 5.5; and (Goskomstat 2012) Table 5.4.

Figure 3 presents more detailed data on the structure of employment by type of ownership in recent years. Several important trends should be emphasized here. An increase in the share of employment in the private sector and the decline in employment in the state sector seem to be obvious. But the level of employment in the private sector, according to the latest data, still remains relatively small. Only 58.8% of the economically active population were employed in the private sector as at the end of 2011. The issue of employment in the sector known as a mixed state-private deserves an in-depth examination. These are of course nothing else that state-owned enterprises with the participation of private capital or private enterprises with the participation of state capital. However, as was already mentioned, these companies are still strictly controlled by the government, so they can be included into the domain of the SOEs. Therefore, state-owned enterprises and enterprises controlled by the state employed 35.7% of the economically active population, 5% were employed in enterprises with foreign capital, and 0.5% − in other organisations. Another noteworthy fact is the decline in the share of mixed ownership during the transition process. In 1995, the share of employment in this sector was 22.2%, but at the end of 2011 this share already declined to no more than 6.3%. This may be a consequence of the policy in the sphere of privatization, involving the so-called residual privatisation, i.e. the sale of shares in these companies in which the state has only partial participation.

Over the past 20 years, the Russian labour market has strongly changed its image. The share of employment in the public and mixed sectors fell from 86.6% in 1990 to 35.7% in 2011, and in late 2000 and early 2001, the share of employment in sectors dependent on the state fell below 50%.

Figure 3. The structure of employment in the Russian and former Soviet-Union economies in the years 1970−2010 by type of ownership, in%



Source: Own calculations based on (Goskomstat 2003) Table 6.5; (Goskomstat 2007) Table 5.5; and (Goskomstat 2012) Table 5.4.

In summary, the level of employment is one of the indirect measures to estimate the scope of the domination of the state within the economy. Of course, the use of this measure may lead to some distortion, because − in general – companies in the public sector have a higher level of employment compared to private companies. On the other hand, it can be assumed that the state sector in Russia − due to its concentration in highly profitable and monopolistic areas – plays even more important role than it seems at first glance.

4. Other indirect measures of the SOE sector in Russia

Statistical data on the Russian economy, especially that regarding the state-owned enterprise sector, published by the National Bureau of Statistics (Goskomstat), can be considered as unreliable. Due to the fact that there are fundamental differences in the statistical methodology, and also because of the various accepted definitions of analysed companies, we can speak of a strong inconsistency in Russian statistics

compared to data from European countries, that are members of Eurostat. The difficulty in accessing these data follows from the fact that some Russian statistical publications are not distributed abroad. Moreover, until the end of the 1990s, the Russian statistical offices did not keep up in their studies with the turbulent changes in the real economic system. For this reason, there was often a problem that certain sets of data from this period did not have the continuity, definitions and classifications of the studied phenomena and processes were changing significantly over time. Russia does not belong to the OECD, and consequently many important issues are not included in OECD reports, or are included to a very limited extent. What is more, there is no unified database of SOEs (or at least none that would be accessible to the scientific community). Even commercial databases do not include information on the ownership structure of Russian companies.

Therefore, the share of the SOE sector within the Russian economy could only be estimated using various indirect measurements. Attempts to do this have been made by the European Bank of Reconstruction and Development. According to the EBRD report produced in 2009, the share of the public sector (which is of course a broader term than the SOE sector share) in the Russian GDP amounts to about 35%, although in 2004 it amounted to 30% (EBRD 2009). Unfortunately, the report does not disclose the underlying methodology for the calculations used to measure this.

Another estimation of the economic significance of the SOEs sector could be made by means of analysing the TOP400 list of Russian enterprises. This ranking provides i.a. information on revenues and profits across the largest Russian companies. Among them there is a considerable number of SOEs.

Table 3 shows a list of 25 largest enterprises in Russia. It is worth noting that, out of the total of 25 included in this list, there are 10 state-owned enterprises. Moreover, the revenues of state enterprises on this list exceed those of private companies by USD 81 billion. Compared with the total revenues of the 400 largest enterprises in Russia (TOP-400), the revenues of the first 10 state-owned enterprises account for almost 30% of the total. The advantage of SOEs is even more significant when it comes to comparing profits. The largest 10 state companies generate more than 53% of profits compared to the profits of enterprises form the whole TOP-400 list.

Table 3. Revenues, net profits and ownership of the first 25 companies from the TOP400 list of the largest Russian enterprises

Rank in 2013	Company name	SOE/private property	Revenues in 2013, in USD billion	Net profit in 2013, in USD million
1	"Gazprom"	SOE	153.3	38950
2	The oil company "Lukoil"	private	116.3	10925
3	The oil company "Rosneft"	SOE	67.5	11004
4	Railways	SOE	49.6	2518
5	Sberbank of Russia	SOE	43.3	11194
6	"TNK-BP Holding"	private	39.9	9009
7	AFK "System"	private	34.2	947
8	"Surgutneftegaz"	SOE	27.3	5796
9	"Transneft"	SOE	23.6	5933
10	"IDGC Holding"	SOE	20.0	1018
11	VTB Group	SOE	19.8	2915
12	The "Inter RAO"	private	17.9	-719
13	X5 Retail Group	private	15.8	-127
14	"Evraz"	private	14.7	-335
15	"Magnet"	private	14.4	808
16	"Tatneft"	SOE	14.3	2524
17	"Severstal"	private	14.1	762
18	"Stroygazkonsalting"	private	12.5	b.d
19	NLMK (NLMK)	private	12.2	596
20	MMC "Norilsk Nickel"	private	12.1	2143
21	"Mechel"	private	11.3	-1665
22	"VimpelCom"	private	10.9	2280
23	The combined company "Rusal"	private	10.9	-337
24	"SGM"	private	10.4	954
25	"Rostelecom"	SOE	10.3	1134
	TOTAL SOEs		**429.1 (29.4%)**	**82986 (53.1%)**
	TOTAL private		**347.7**	**25241**
	TOTAL for the TOP-400		**1457.5**	**156214**

Source: Own calculation based on data from RA Expert, www.raexpert.ru

5. Conclusions

The research conducted within this paper reveals a whole list of methodological issues that hinder the proper examination of the state-owned enterprises sector within the Russian economy. The main limitation is the lack of reliable data on this subject. Another problem is connected with the term "state-owned enterprise" itself. This term applies to the whole list of different entities that have different parameters of

operation. Unitary enterprises are very widespread at the municipal level and represent mainly utility services. These companies have been partially privatised, since they are not very attractive for the government. When analysing privatisation data, SOEs from the local and municipal levels were the main targets for privatisation, especially during the first decade of the transformation.

In contrast, joint-stock companies that are owned by the Russian government are big and powerful enterprises that often operate within very profitable sectors of the economy and are considered as the "blue chips" of the Russian economy. The analysis of the TOP-400 list shows that the largest SOEs often surpass their private counterparts in terms of revenue and profits.

The scope of the research conducted within this paper has not covered the analysis of the SOEs that are organised in the form of state corporations, but many facts suggest that this form of state-owned enterprises is the least transparent one. Every single state corporation is established by a separate law. These legal acts often give some privileges to state corporations. This leads to numerous instances of unfair competition with the private sector, separate (preferential) procedures for access to capital and lower disclosure requirements (Sprenger 2010, pp. 90-110.).

All of the abovementioned facts suggest that the state-owned enterprises sector within the Russian economy is divided into two structurally different subsectors: small obsolete enterprises that often operate within the utilities sector and which are the remnants of the bygone era of communism, and big corporations that are very important for their owner (the Russian state). The first subgroup is a burden for the economy and must be eliminated as fast as possible. The second one plays a very important – if not the leading – role within the Russian economy.

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9. Is the state ownership of enterprises gaining in importance in a modern economy?

Grzegorz Kwiatkowski

Despite the ongoing privatization, state-owned enterprises (SOEs) still play an important role in many countries. Moreover, some scholars argue that today we are dealing with a possible of return of state-owned enterprises in the global economy. This paper reviews available data on SOEs in the context of the above mentioned thesis. First we review data on the current scope, structure and importance of the state-owned enterprise sector in a modern economy. It can be concluded that the SOEs play a significant role in a modern economy. Primarily this statement can be applied to developing countries. However, in developed countries SOEs constitute an important part of the economy as well. Next we review data on changing importance of SOEs. For this purpose we examine the Fortune Global 500 list, Product Market Regulation (PMR) indicator data and the list of the largest Polish companies. Subsequently we try to explain those ongoing trends. We could say that SOEs play a significant role in a modern economy and there is some evidence that they are gaining in importance. Among the factors responsible for this possible increase of the importance of SOEs in the world economy are:

- *The changes in the balance of power in the global economy, especially due to the rise of China and other BRIC countries, where government ownership plays a relatively large role in comparison with OECD countries.*
- *Issues related to the control over natural resources.*
- *The increase in government activity in many areas of the economy as a result of the financial crisis.*

However this process is not leading to a return to the number of SOEs that we saw in the 20th century, but what we see is a change in the way in which SOEs are used by the state owner. Governments are attempting to maintain the control and simultaneously to improve the efficiency of SOEs through better governance and greater reliance on market mechanisms.

Keywords: state-owned enterprise, BRIC, OECD, government activity

1. Introduction

Despite the ongoing privatization, state-owned enterprises (SOEs) still play an important role in many countries. Moreover, some scholars argue that today we are dealing with some kind of return of state-owned enterprises in the global economy (Flores-Macias−Musacchio 2009, Bremmer 2010, The Economist 2012, Florio 2014). This paper reviews available data on SOEs in the context of the above mentioned thesis. However, some difficulties due to incomplete or incompatible data available should be noticed. These problems arise from the nature of the category of the state-owned enterprise because this can include a wide range of items. They can differ in the legal basis (joint-stock companies or statutory companies), by the level of the state's share in ownership (some reports only include enterprises where the ownership is higher than 50%, but many enterprises are effectively controlled by governments with a much lower stake) and by the level of state (central government, federal or local).

2. How important are SOEs in a modern economy?

These objections, though important, should not prevent the estimation of the current status of state ownership. First, we examine the OECD report entitled *The Size and Composition of the SOEs Sector in OECD Countries*, which includes 27 of the 34 OECD countries. The data contained in the report is from the years 2008−2009. The aggregate results indicate that state-owned enterprises in OECD countries (defined as one hundred percent or majority state shareholding) employ a total of over 6 million people, and its value is close to 2 trillion dollars. If these figures were to take into account the companies in which the state has a minority stake, but sufficient to exercise effective control, these numbers should be increased by about 3 million people and 1 trillion dollars. The study has also examined the structure of SOEs by sector. Half of them can be classified into network industries (mainly transport and energy) and a large part (one quarter) are financial institutions. It is worth noting that these sectors are very important to other parts of the economy. To describe the importance of state-owned enterprises only two indicators – due to incomplete data – have been used: the value of assets held by state-owned enterprises in relation to the GDP of the country and employment in state-owned enterprises in relation to the overall level of employment in the economy. For the first indicator the leader is Mexico[1], where the ratio exceeds 100%, next are countries such as the Czech Re-

[1] Mostly due to hydrocarbons company PEMEX.

public, Poland, Finland and Norway, where the result are between 20 and 30%. The average for all countries surveyed is 15%. In the case of employment the report indicates Norway as the country with the highest proportion of people employed in SOEs. Closer examination of the report shows there are certain problems that indicate data and conclusions contained in the report should be used with considerable caution. As the authors themselves admit, the quality of supplied data by individual countries is quite varied, in some economies the data is not complete (e.g. Poland) and state-owned enterprise definitions vary from country to country. The report also lacks statistics from important economies such as the U.S. or Japan (Christiansen 2011, pp. 3-5.).

Another recent report based on an analysis of companies in the Forbes Global 2000 list, estimates that state-owned enterprises account for about 10% of the featured corporations (Kowalski et al. 2013, p. 6.). Florio (2014, p. 14.) used this data to conclude that SOEs would represent between 11% and 16% of total sale, profits, assets, market value of the Forbes Global 2000 aggregate.

In terms of geographical distribution it is worth noting the following facts:

- of the 1,500 companies from OECD countries 41 are considered as SOEs, which gives 3%. For the BRIC countries – this ratio is 116 to 234 (i.e. almost 50%);
- among the OECD countries, a relatively large number of SOEs on the list come from Poland (6), Switzerland (6), France (5) and South Korea (4);
- 3 companies are from the USA;
- from non-OECD countries the largest number of corporations are from China (70), India (30), Russia (9), Brazil (7) and Indonesia (6).

Sectors where the share of SOEs is high include coal mining, land transport, transport via pipelines, oil extraction, electricity and gas, telecommunications, financial institutions, engineering, warehousing, manufacturing and air transport (Kowalski et al. 2013, pp. 6-7.). However, care must be taken when analyzing the Forbes list because it contains only companies listed on the stock exchange.

According to the data contained in the Robinett (2006, p. 1) report, the importance of state-owned enterprises in emerging economies is conditioned by their presence in key sectors of the economy. They are particularly present in industries such as rail and air transport, electricity, water and gas, utilities, mining of natural resources, telecommunications, banking and insurance. The share of the state-owned enterprises in the economies of these countries is varied. According to Lazzarini and Musacchio (2012) contribution to GDP (excluding the financial sector) ranges from approximately 30% (China, Brazil, Vietnam) through to around 13% (Singapore, India, Turkey) and to 2–3% (Indonesia and Mexico).

Summarizing the above presented data it can be concluded that the SOEs play a significant role in a modern economy. Primarily this statement can be applied to developing countries. However, in developed countries they constitute an important part of the economy as well.

3. Are state-owned enterprises really gaining in importance?

Flores-Macias and Musacchio (2009) put the thesis that today we are dealing with some kind of return of state-owned enterprises in the global economy. According to these researchers the importance of SOEs in recent years has grown and will continue to grow in the future. A similar statement appears in (Bremmer 2010) and (Florio 2014).

One of the measures of the importance of SOEs in the modern economy could be their share in the list of the largest companies in the world.[2] For this purpose an analysis of the Fortune Global 500 list for the years 2005 to 2012 was conducted. The number of state-owned enterprises over the examined period continued to grow. In 2005, the list included 49 SOEs, and in 2012 there were 95 of them. Share by quantity grew from 10% to 19%. When looking at employment in companies on the Fortune Global 500 list, in 2005 18.4% were employed by SOEs and this figure grew to almost 30% in 2012. Revenues of SOEs on the list in 2005 reached a value of $1.3 trillion (8% of the total), while in 2012 it was $5.8 trillion (19.6% of the total).

Table 1. Shares of SOEs on Fortune Global 500 list according to various criteria, %

Year	Share by quantity	Share by employment	Share by revenues	Share by profits	Share by assets	Share by total shareholders' equity
2005	9,8	18,4	8	8,2	8,9	9,2
2006	10,8	19,9	8,8	9,9	9,2	11,3
2007	11	19,7	9,2	10,4	8,8	12,3
2008	11,4	19,9	10,3	12	9,1	13,8
2009	13,8	23,6	14,5	11,9	15,7	16,5
2010	15	24,8	15,3	9,3	18,8	17,7
2011	17,2	27,7	17,8	16,9	22,2	19,2
2012	19	29,8	19,6	22,2	19,3	21,1

Source: Own calculations based on data from the Fortune Global 500 list (2013)

[2] This part draws from Augustynowicz and Kwiatkowski (2013).

To explain the cause of the increase of the share of state-owned enterprises on the Fortune Global 500 list we should analyze it by the country of origin. The largest number of SOEs is in China. The share of Chinese state-owned enterprises as a proportion of the total number of SOEs increased from about 28% in 2005 to 65% in 2012 (there were 61 Chinese SOEs on the list at the end of 2012).

Table 2. Areas of activity of SOEs

	2005	2006	2007	2008	2009	2010	2011	2012
Number of SOEs on the list								
Public utilities	21	19	18	17	18	18	20	22
Natural resources	14	16	19	19	23	24	31	33
Financial institutions	10	11	10	11	15	18	15	16
Other	4	8	8	10	13	15	20	24

Source: Own calculations based on data from the Fortune Global 500 list (2013)

As illustrated in Table 2 the largest number of state-owned enterprises operates in the natural resource sector. Moreover, the number of these companies increased from 14 to 33. The number of enterprises providing public services ranged between 17 to 22, although the share of this group increased slightly (from 26.3 to 31%). The number of financial institutions has also increased from 10 to 16 companies.

The role of state-owned enterprises in the natural resources sector can be illustrated by the fact that they control about ¾ of the world's oil reserves (Bremmer 2010, p. 9). It is worth noting that they mostly come from countries that aren't OECD members. The current situation is the result of a progressive process of nationalization of natural resources in the twentieth century, starting in Mexico in the 30s, continuing in the Middle East in the 70s and now taking place in countries such as Venezuela and Russia.

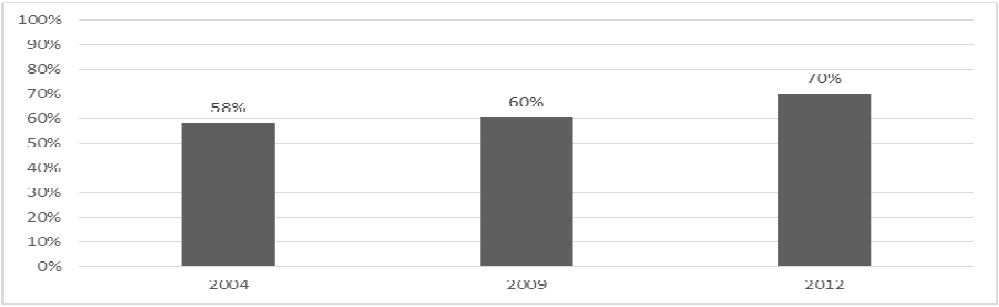
Additional information is provided in the *Product Market Regulation (PMR)* indicator developed by the OECD. It is a complex indicator that takes into account certain qualitative and quantitative aspects of interference in market competition. Currently, the number for the years 1998, 2003, 2008 and 2013 are available. Important in the context of this article part of the indicator determines the level of the share of state ownership in the economy based on four components (Product Market Regulation 2013):

1. Scope of public enterprises;
2. Government involvement in network sectors;
3. Direct control over business enterprises;
4. Governance of state-owned enterprises.

This last component lacks data prior to 2008 so a comparison of indicators over time must be taken into account to change the methodology of calculating the indicator. After this adjustment, it turns out that for most of the countries surveyed value of the index is decreasing. For the years 1998 and 2003 complete data is available for 22 countries and only for three of them (Australia, Canada and New Zealand) the indicator increased (which should be interpreted as an increase in the importance of state ownership). For the years 2003 and 2008 we have data from 23 countries − in those years, the index rose only for five countries (Australia, Belgium, New Zealand, Sweden and the United Kingdom). For the year 2008 and 2013 the data is available for 26 OECD countries and we see increases for 7 economies (Denmark, Estonia, Iceland, Ireland, New Zealand, Slovakia and Switzerland). It is not surprising that the score in non-OECD countries on average are higher than in OECD countries.

An interesting conclusion comes from the analysis of the largest companies in certain countries. For example if we examine the 1300 largest Polish companies for the presence of SOEs, it turns out that the share of SOEs decreases in time. In 2004 the state-owned enterprises constituted 12.5% of the companies, earned almost 25% of revenue and had 40% of employment. Five years later these shares had decreased significantly: the number of enterprises by around 50%, revenues to less than 15% and employment to less than 30%. However, if we focus only on the top 20 companies we could check every company ownership structure to take into account those companies in which the state has a share of less than 50% (but sufficient to exercise effective control of ownership).

Figure 1. Total share of revenues of companies controlled by the state in the group of largest 20 companies



Source: Own calculations based on data from the list of Polish largest companies (published by Rzeczpospolita).

The graph shows the share of revenues of companies controlled by the state in the total revenues. The paradox is that although in the discussed period of time the privatization processes continued, the analyzed category increased. Minority stakes of companies such as PGE, Lotos, KGHM, JSW or Tauron were sold, but in every case the government kept the controlling stake. This phenomenon can be analyzed by framework presented by Musacchio and Lazzarini (2012). They distinguish two general types of modern state capitalism due to the state's share in the ownership of enterprises: the first in which the state holds majority stakes in many companies (Leviathan as a majority investor) and the second that relies on minority shares in companies held by development banks, pension funds, sovereign wealth funds, and the government itself (Leviathan as a minority investor). The state control over enterprises with formal minority ownership shares can be implemented at least in three ways:

1. the use of "golden share";
2. special rules in the articles of association of a joint-stock company;
3. reaching the position of a dominant shareholder.

Comparison of the two models leads to the conclusion that the transition to Leviathan as a minority investor model can reduce agency problems (i.e. different objectives of managers and owners) and lessen threat of using SOEs to obtain non-economic goals. On the other side this happens at the cost of losing some degree of influence on the activities of these companies, and so using SOEs to implement the economic policies by the state.

Another important factor influencing the importance of state ownership is the global financial crisis. Governments in many countries decided to take active measures to mitigate the effects of the financial crisis. Among these measures was the nationalization of enterprises (SNS Bank − the Netherlands, Anglo Irish Bank − Ireland, BNP − Portugal, Royal Bank of Scotland − United Kingdom, AIG and General Motors – USA). Although in many cases, nationalization was temporary − nationalized companies were later reprivatized, the question arises whether these actions are the exception to the rules of the economic policy or a permanent change of the ownership function of the state. It seems to be too early to assess the long-term effects of the crisis. Also there are some reports on re-municipalization (Florio 2014, p. 6.), which means that municipal or public services are again not only financed but also provided by the state.

4. Conclusions and final remarks

Concluding on above presented data we could say that SOEs play a significant role in a modern economy and there is some evidence that they are gaining in importance. Among the factors responsible for this possible increase of the importance of SOEs in the world economy are:

1. the changes in the balance of power in the global economy, especially due to the rise of China and other BRIC countries, where government ownership plays a relatively larger role in comparison with OECD countries;
2. issues related to the control over natural resources;
3. the increase in government activity in many areas of the economy as a result of the financial crisis.

However this process is not leading to a return to the number of SOEs that we saw in the 20th century (as shown in the analysis of *Product Market Regulation* data), but what we see is the change of ways in which SOEs are used by governments. To gain in importance SOEs have to operate more efficiently than in the past. Traditional theoretical approaches to explaining the inefficiency of state enterprises can be divided into two general groups: the first refers to the environment (limited or lack of competition) and the second explains it as a problem of inherent features of state ownership, referring mainly to the theory of property rights (Bartel–Harrison pp. 1-4.). These include issues such as: agency problem, soft budget constraint, multiple goals (vaguely defined social goals), direct influence of politicians, bureaucracy, restrictions on remuneration, as well as hiring and firing of workers, strong influence of unions, low ability to reduce costs and to innovate.

Modern methods of management and supervision to some extent limit the negative effects of the those "classical" causes of the inefficiency of state-owned enterprises. Flores-Macias and Musacchio (2009) list the five characteristics of modern state-owned enterprises, which significantly improve the way they operate. These are:

1. emission of shares in stock exchanges, with the dual purpose of raising capital and subjecting management to the daily evaluation of the stock prices;
2. independent auditors and members of the Board of Directors;
3. credible restrictions on the transfer of subsidies from the government;
4. recruitment of more highly qualified executives;
5. incentive schemes for managerial pay.

Many of these changes − especially in developed countries − took place as a result of the problems caused by the earlier, often very inefficient operation of state-owned enterprises. Given the fiscal problems of many countries in the 1980s and 1990s many state-owned enterprises subsequently had to look for opportunities to raise capital in the financial markets. As a result, they were partially privatized. Others had to raise capital through the issue of bonds or taking loans from financial institutions. In any case it was related, at least to some extent, to the necessity of meeting the standards of reporting, the evaluation of rating agencies and the high cost of hiring external auditors etc. This meant SOEs had to operate in a similar way to private sector enterprises.

More coherent government policy towards state-owned enterprises will result in increased efficiency. These policies should include clearly defined social objectives, as well as clear criteria for the creation and management of such entities. Criteria can also include a requirement for periodic inspection, evaluation and justification for the company remaining in the domain of the state. Another improvement might be to create special agencies supervising the whole or part of the SOEs sector. In addition, the process of privatization in the last thirty years has led to a reduction of the number of SOEs, which makes it easier to control and to evaluate them. This does not mean, however, that all state-owned enterprises are as efficient as their best-functioning private counterparts. However, there are many examples (Statoil, Petrobras or Indian Railways) which show that it is possible to significantly improve the efficiency of the state-owned enterprises.

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10. Sustainable investment decision making for Biogas plants in Hungary and the utility cost reduction measure

Bálint Valentin Pikler

This study attempts to biogas plants for combined power plus heat and bio methane production the decision making process. The second part will present the licensing process of biogas plants. I will take all aspects of investments into account. This will be the macro economical aspects like inflation for different products used for or complementary to biogenic processes in biogas production. Furthermore, the study will shows different investment calculations based on feed in tariffs, EU investment incentive schemes and the utility cost reduction masures by the Hungarian government. The third aspect for the investment decision will be the licensing process and the costs for the facility costs itself. This will calculated on a sample biogas plants which are a small and a middle size facilities. The study is complex, the investment decisions must be well based, as the plants are running over decades. The administration process of biogas plants is also a larger issue, as the legal background of renewable energy is about to change permanently in recent years. This aspect makes the study actual and the legal changes are absolutely necessary take into account.

Keywords: decision making process, investment biogas, bio-energy, biogas, renewable energy in Hungary, utility cost reduction

1. Introduction and Background

The social and political aspirations of a sustainable energy grew stronger in recent years. Due to the adverse environmental impacts of climate change and dwindling fossil fuels. "Renewable energy" is the buzzword - it will in future replace conventional energy sources. A special role plays the power generation from biomass, particularly illustrating the biogas production is a promising form of energy (Kaltschmitt–Hartmann 2001). Where the economic and environmental benefits of biogas production are evident: for planners, producers, installers and operators of biogas plants offers a wide range of activities. In particular, for agriculture open up new sources of income as "energy industry" or as producers of energy crops. Contributes to the production of biogas to conserve natural resources and a decentralized energy supply. The aim of this case study is the preparation of an investment decision between two mutually exclusive investment alternatives in terms of agricultural biogas

plants. The Hungarian energy market is in the course of their accession to the European Union (EU) been fully liberalised. The major providers are government owned MVM and MOL, they have still a dominant influence on the market. From more characteristics of the Hungarian energy market are the distinct dependence on imports and the low energy efficiency in European comparison. Natural gas is in a proportion of about 43% (2009) of the total primary energy consumption of the most important energy source in Hungary. Renewable energy plays of primary energy supply not a significant role. According to a study WWF, the share of renewable energy in primary energy consumption in 2008 5.6%. The IEA and the MVM indicate a value of less than 5%. Structure of energy sources in electricity generation in the last years on averge 21.8% on gas (Statistical office: KSH).

The domestic production of primary energy sources in Hungary is continuing steadily. During 1990, she was 48.5% and in 2000 at 44.26%, the resulting Figures for 2003, in-house production of only 35.6%. This becomes particularly clear the increasing dependence on imported oil and natural gas: in 2003, the Import quota of natural gas at about 80 percent of oil and oil products at 86 % (Eurostat). This factors shows that the there is further a need of decentral and local energy generation in Hungary.

In the case study the farmer as an investor is faced with the decision to build a small 150 kW system for the exclusive fermentation of manure and solid manure from on-site dairy farm, or in a larger 500 kW system, which in addition to the renewable resource "corn silage" codigestion to invest. The decision in the sense of economic evaluation is to take place by means of selected monetary investment calculation method and a non-monetary cost-benefit analysis. Essential data of this study are based on the German Association for Technology and Construction in Agriculture (KTBL) publish laboratory values and test results.

In Hungary the dataset is not given in the deepth as in Germany, but the Central Statistic Office (KSH) publishing about the subject. These are found in practice with a lot of attention and include physical, technical and business information. Under an investment is the use of capital, ie, the longer-term bond funds understood in assets affected Becker (2009), Hoffmeister (2008). In case of biogas investment is especially the procurement of balance sheet assets (fixed assets as non-current assets as opposed to short-term working capital) with production of useful way. Formally, the investment can be defined as cash flow, the first begins with an issue and draws a future benefit or net income by itself (Blohm et al. 2006), Seicht 2001, Walz–Gramlich 2009). Also the types of investments in intangible investments (concessions, patents, licenses) capital investment (land, buildings, machinery) and financial investments (investments, securities) can be classified.

Investment decisions have a significant impact on the success or failure of the company, because it usually has a high and long -term capital commitment (Blohm et al. 2006). Because of the associated long-term consequences and regular impact on other divisions, it requires intensive preparation in which the later consequences of the respective investment alternatives carefully evaluated possible werden (Kruschwitz 2000). The investment decision always implies an assessment of the profitability of an investment. Is directed to a single project investment, it is the absolute advantageousness. If at least two investment alternatives evaluated, the relative advantage is considered. If it appears that an investment alternative as relatively advantageous, it may nevertheless only be realized if also given their absolute favorability. The decision on the profitability of an investment alternative based on a certain (subjective) objective of the investor (Walz–Gramlich 2009). Unter objectives are understood as desirable to seeing future states that will occur as a result of certain behaviors (Kruschwitz 2000). To find out which of several investment alternatives, the best, the goals must be operationalized, i.e. it requires a clear definition of objectives in terms of a clear, understandable and differentiating description (Kruschwitz 2000). It has usually several goals, it makes sense to bundle target set (target systems), which consist of monetary and non-monetary goals. These will be described in more detail in the following chapter.

In many cases a single farmer, single individual investor or even a group of investors is not capable of financing the whole project by equity capital. Therefore, borrowed capital, EU subvention or subsidy is essential for the implementation of a biogas plant. Common financing methods are credits from private banks or state owned banks. Traditional loan financing is the most common way of receiving borrowed capital from banks. This form of financing is not just used for major investments, as they are regularly needed within biogas projects, but also covers many smaller private loans. The bank or state owned subsidy office checks the financial background of the borrower in order to decide on the reliability and risk of the engagement. Of particular interest for financial institutes are securities in case the project fails. Such securities may consist of estate, components of the biogas plant, private – and company asset, and all other assets that cover the loan sum. Furthermore, the prospects of success of the project are analysed. The prospect and decision making of biogas projects in Hungary will be deepen in the second section of this study. As example, in Germany the duration of loans for biogas projects as well as the number of grace years is strongly dependent on the prerequisites of each particular biogas project. However, regular loan and subsidy periods with fixed interest rates and feed in tariffs are about 15 years and typically one or two grace years are granted for the starting up phase for the loan.

2. Monetary objectives

Monetary targets have the advantage that they always can be quantified and can be simulated by means of static and dynamic investment calculations over non - monetary goals (Kruschwitz 2000). The most important monetary target is the long-term gain. It may in assets struts (Valuemaximizing) and income aspiration (removal maximization) are divided regularly. Assets pursuit aims at a maximum assets at the end of an operation period, which can be calculated using the net present value. Finally, the net present value brings the increase or decrease in financial assets at a given rate of return in terms of value relative to the beginning of the planning period (Blohm et al. 2006). Income struts aims to maximize the removal of each period, which can be quantified with the annuity. The annuity is a profit ratio that reflects the periodic success. As a further monetary goal the maximization of return can be set and it is measured on the basis of internal interest rate methods.

The following specific objectives for the investor farmer are to define:

- Capital value € 1 million at a discount rate of minimum 5 %;
- Income (annuity) of at least € 100,000 or 30.000.000 HUF a year;
- Profitability of at least 10 % and internal rate of return of at least 5 %.

The achievement of the non-monetary objectives is checked outside of the capital budgeting process by means of a cost-benefit analysis. Under non- monetary objectives utility values are understood to be quantified not based on incoming and outgoing payments and bring the subjective perception of the investor's specific demands on the virtue worthy investment alternative to expression (Seicht 2001). The investor pursues here the following non-monetary goals that are legal, environmental and technical nature:

- Warranty period for the plant of at least four years;
- Bureaucratic approval procedures;
- Advantageous properties of the digestate;
- Positive record;
- Process stability;
- High degree of automation.

As already indicated, biogas is particularly distinguished by its variety of uses. It is designed to support preparation and injection into natural gas networks not only as fuel and natural gas substitute, but CHP can also be used to generate electricity and heat generation using combined heat and power in cogeneration plants. The obtained electrical and thermal energy can be fed into supply networks and self-consumed. Typical areas of use for the biogas-generated thermal energy are in farms

feeding into a district heating network to heat residential and commercial buildings as well as stables and animal breeding places and the hot water supply Kaltschmitt–Hartmann (2001). In Hungary, a large potential of biomass for energy production is given. It is important to distinguish between the potential of the forestry sector and the biomass potential from agriculture. In general, the potential assessment should be evaluated very carefully. While the wood potential is largely exhausted, the biogas potential is only about 10%. Hungarian agriculture provides good opportunities to increase the biogas sector. 57% of the country occupy agricultural land. Each year 14 to 15 million m^3 manure to fall in livestock farming as well as 300,000 tonnes of slaughter waste that can be recycled and disposed of in biogas plants. To the agricultural waste sludge coming from the municipal sewage disposal. This is to be expected in the future with a larger volume. Agriculture can use brownfield sites for the cultivation of energy crops such as rapeseed or sunflower. For this sequence using the farmers can again take EU subsidies. The highest methane content in the biogas obtained the substance group of proteins with 71% Fats provide a gas with a methane content of approximately 68%. The worst performers from carbohydrates, with only 50% methane content (Eder–Schulz 2006).

3. Planning of Biogas project decisions

In general there are many objectives to cover by the decision making for a large investment like a biogas plant. They are the energy prices in short and long term, Industry structure: Share of renewable energies and policy objectives, economic arguments pro and cons, Feed-in tariff, Green Certificate Mechanism revenue, Agricultural Potential, Biomass potential, Income from sales of electricity and heat, Approval procedures for Biogas plants, Subsidy schemes, Partners, Concluding long-term supply contracts. Based on a German KTBL calculation, we set our starting point is an existing agricultural operation from the definied sample farmer investor which has (sole proprietorship) with 320 cattle for the dairy farm. The obtained in the dairy cattle manure (slurry and solid manure) to be fermented in each case in a still to be constructed agricultural biogas plant. The biogas produced in the plant is to be converted in each case by means of combined heat and power in a connected CHP heat and electricity. The electricity will be each entirely fed into the power grid. For the use of waste heat utilization is a concept which provides to heat the houses and farm buildings with a total floor space of 1,000 m2. The digestate is to be sold as a high quality fertilizer to agricultural customers. The investor faces the following investment alternatives:

1. Alternative: The first investment alternative only manure and solid manure is fermented from the cattle. In this respect, a small biogas plant will be built with an installed electrical capacity of 150 kW.
2. Alternative: In the second investment alternative the establishment of a much larger 500 kW biogas plant is being considered. The background is the idea that the co-fermentation of renewable raw's because of their higher biogas and methane yield is often more economical than the exclusive fermentation of manure. In view of these investment alternatives, it is now exactly match the dimensions of the major system components on the proposed substrate volume and its gas yield. Only by a full utilization of all system components can be ensured later the efficiency of the systems. To determine the annual manure and manure volume of livestock on the farm in standardized livestock units (LU) is converted (Anspach 2010). After the conversion of the key KTBL result from 320 cattle of different ages. The livestock unit has an annual manure seizure of 20 tons and an annual Mista case of 11 t to be expected (KTBL 2009). In the second alternative also 7,000 tons of silage maize to be purchased from a neighboring farmer and used for co-fermentation.

4. Financing of Biogas plants

Interest in the construction of biogas plants have before the one the suppliers of input material. Therefore, they can also act as investors of the project. Hungarian banks yet gained no special expertise in the field of financing of renewable energy projects. At most, the OTP Bank identifies himself as a specialist in this area, but comes only as a partner in major projects in question. The OTP is based on its own information on the time and know-how can use the experience of the DZ Bank Group. It comes as a partner for small projects in question is represented by the savings cooperative banks heavily on location fundamental problem in the search for investors, however, is the political uncertainty of the grant of the feed in tariff. A fully secure financial planning can therefore be in the long run not so deterred many investors. Project financing in general is intended to finance a very particular investment which is repaid by its own cash flow. The financing bank makes its decision on the loan in the first place on the estimated cash flow of the project. In contrast to conventional loan financing, the financier usually has little or no access to private or company capital. In case of financing a biogas project, the financier's investment is secured by the estimated cash flow of the plant selling electricity, the plant components and by the property of the plant site. Prerequisite to achieve pro-

ject financing is the formation of a dedicated biogas project company. Project financing provides considerably higher risks for financiers than conventional financing, since the loan can only be repaid when the project is operational. Therefore, banks are interested in minimizing potential risks. All aspects of the project are analysed very carefully. This leads to increased administrative work for both parties. The investor has to prepare all project documentation in high detail. This procedure can be considerably time consuming. Advantages and disadvantages of project financing structure:

+ The investor is not liable with private asset in case of project failure.
+ The financial institute helps identifying and allocating potential week points of the project.
+ It does not matter, how many people join the project company. Thus, a consortium of farmers can jointly operate a biogas plant.
+ Capacity for further loans is not constrained, as private estate is not charged.
− High administrative complexity.
− A project company has to be founded.
− Not every bank provides the option of project financing.
− Interest rates might be higher.

Acquiring leasing partners is a frequently applied method for gathering equity capital for a biogas project. Leasing is characterised by the distinction of plant constructor (leasing company) and plant operator (lessee). The leasing company constructs and finances the plant by company capital or equity capital from leasing partners. Afterwards the company leaves the plant to the lessee who has to take the risks of operation. The lessee keeps all revenues from the operation of the biogas plant but has to pay leasing rates to the leasing company. After the contract expired, the lessee can either buy the plant corresponding to its residual value, or the leasing company has to remove it.

Advantages and disadvantages:

+ Leasing partners provide expertise in biogas plant implementation and operation.
+ External investors have the opportunity to join the leasing company.
+ Farmers with low equity capital have the opportunity to operate a biogas plant.
− The leasing company does not have direct influence on the operation of the plant. Thus, success or failure of the project lies in “someone else’s hand” (lessee).
− After the contract expired, the biogas plant might have a considerable residual value, which makes removal uneconomic for the leasing company.

5. Decision making process, main drivers

Due to the opening of the Hungarian energy market, the Hungarian energy prices reflect realistic market prices. According to the price index for energy costs of the Austrian Energy Agency (EVA), energy prices for households and industry in the period 1995 to 2001 have increased substantially (for households by 130% to 150% for the industry). After the price of electricity from 1985 to 2008 more than doubled, is for industrial power users now have a slight decrease in electricity prices expected, while the price of homes will continue to rise.

After the input in the form of substrate amounts and the dimensioning of the biogas plant alternatives are fixed, now, a quantitative yield and subsequent investigation proceeds held in terms of the output. This is in electrical energy (electricity), and – as a by-or co-products – in thermal energy (heat) and digestate, Anspach (2010). A meaningful utilization of the end products is also essential for economic production of biogas. The current revenues are made up of the feed-in remuneration for the electricity produced from the cost saving for the used amount of heat and of the achievable selling prices for the heat produced. In order to later be able to determine the produced electricity and heat, the first biogas and methane yield in the fermentation must be known. This is substrate specific, depends on the respective organic dry mass fractions of the substrates and can be calculated according to the KTBL. In the following we take the methane yield for the 150 kW plant in the amount of 303 724 Nm3 and for the 500 kW system results in the amount of 1,049,854 Nm3. 1 m3 of methane has a heating value (gross energy value) of 10 kWh. Hence the approximated gross annual amount of energy (kWh) in the amount of 3,037,238 kWh and 10,498,538 kWh.

Regarding the EU policy objectives the Hungarian government has to increase the share of renewable energies in the total energy production by 2010 to increase to 5%. Long term, the EU funds will reach 12%. This goal is, among other things, by the requirements of EU directives in the field of renewable energy (Directive 77/2002), the environment and security of supply. As the reserves of its own fossil fuels are estimated to be very low, which is as yet little used bioenergy potential should be better exploited. In this way, the increasingly pronounced dependence on imports is reduced. Furthermore, the development of bioenergy in the interests of the Hungarian government, since the cooperation with suppliers biomass as agricultural and forestry enterprises maintain employment in rural areas or created.

Biomass biogas plants or to offer to the wind energy as compared to the advantage of uniformly to generate power. This leads, for example, compared to wind power at lower power and control costs. From distributed generation and degradation of energy in turn accounts for high net development or maintenance costs, and

transport losses in the network. In rural areas especially, the biogas plant can also be used to process agricultural waste such as manure or municipal sewage sludge and reduce the cost of disposal. Overall, it is desirable both from the political side as well as from a purely economic point of view, a further expansion of bioenergy in Hungary.

For German suppliers of modern technology offers therefore a larger market. The Economic and Transport Ministry drafts the policy and regulatory environment in Hungary and settled in this manner determine the long-term energy strategy. The essential task of the Ministry the annual determination of energy prices (electricity and gas). The Hungarian Energy Office, the Hungarian Energy Office performs the function of a regulator in the Hungarian energy market. Under the supervision of the Authority are the electricity and gas sector, monitoring the quality of public services, the granting of licenses and the provision of consumer protection. On behalf of the Ministry of Economy and Transport Authority designs the working principles for the design of national energy policy. The Hungarian Energy Centre (Energia Központ Kht.) (see contact list), the Hungarian Energy Centre (Energia Központ Kht) coordinates national and international support measures for the introduction of renewable energy sources and to increase energy efficiency. Among since EU accession also includes the funds from the EU Cohesion Fund. In addition to providing information regarding subsidy leads the energy center of a national energy statistics and publishes information brochures on general energy issues. Electricity Act (Act CX of 2001).

The regulations for the supply of electricity from renewable sources is defined in the Electricity Act (Act CX of 2001 on electricity completed with the Governmental Decree 180/2002 (VIII. 23.) on the enforcement of it). Under this law, the supply grid operator MVM Ltd., obliges electricity from renewable sources, independent power producers, which is produced by plants with a capacity of 0.1 MW to decrease. If the system is not connected to the transmission network of MVM Ltd., the compensation granted by the regional distribution system operators Édász, Demasz, DEDASZ, Titász, ELMU and EMASZ). The purchase price is determined in accordance with Decree 56/2002 (XII. 29.) GKM by the Ministry of Economy. The price is adjusted annually by the inflation rate. In 2003 was at 24 HUF / kWh (about 9.26 EURct) for electricity for peak loads and 15 HUF / kWh (about 5.78 EURct) for electricity to cover basic loads. This gives an average payment of 17.41 HUF / kWh (6.6 EURct). This scheme retains initially to 31 December 2010 its validity.

A major criticism of this scheme is the lack of predictability and the uniform grant of compensation, regardless of the renewable energy source. In addition, the amount of compensation deemed insufficient. Besides the guaranteed feed-in price, there is a Green Certificate system in Hungary. According to the statutory scheme, a

certificate system for renewably generated electricity is introduced. HEO certified producer of green electricity this can for each produced unit power output a corresponding certificate. Electricity consumers are bound to end u p a year to seize a determined percentage of their electricity consumption with such Green Certificates. This can directly relate the power producers or buy on a set up market. For the producers of renewable electricity is obtained through the sale of allowances a source of revenues. The calculation of the by-products as quantitative output size is important in that the fermented substrate amounts can be sold as high-quality, nutrient-rich fertilizer to agricultural customers. The nutrients do not go through the fermentation that is lost, but are rather highly concentrated as digestate and odour in flowable form. The digestate can extent a conventional and polluting fertilizers (Eder–Schulz 2006). The value of the digestate fertilizer depends not only on the amounts of its nutrient content (N, P, K) and the current nutrient prices. Also taken into account minor treatment costs a fertilizer proceeds of 2.00 € / m3 can be recognized.

In the agricultural sector, personnel costs are to be brought to approach as wages and non-wage labor costs, ie variable costs. While the system support comprises essentially routine work such as operating checks, maintenance and fault fixes, as well as office work in terms of data collection and organization, the substrate binds Management working hours for the feeding of the plant and for the processing, storage and dosage of the substrates used (Koch 2009). In principle, the time required for the operation of a fermentation plant of the operational concept, size and the substrates used depends. In general, in agricultural biogas plants – as opposed to waste fermentation plants that require multiple full-time employees – one to five hours a day sufficient are. In the literature, the view is uniformly represented that with increasing size of the system also increases the level of automation, which is a decrease of care burden result (Eder–Schulz 2006). In the literature, the view is uniformly represented that with increasing size of the system also increases the level of automation, which is a decrease of care burden result. Due to the high technical requirements to work in a biogas plant, a high claim should be placed on the qualifications and reliability of the staff, which would appear justifiable an hourly rate including all non-wage costs of 5 € / h (Koch 2010). In the larger biogas plant, a higher workload than the smaller plant is assumed, because in addition here 's renewable resources are differentiate, so that require a higher daily time spent on the substrate management. The cattle manure and cattle solid manure represents a waste product of the company's own dairy cattle and the biogas plant is free of charge. In the second Investment alternative is bought to in silage maize for biogas production. Maize is particularly beneficial in growing and very undemanding in terms of the soil. Depending on the specific cultivation costs (seed, fertilizer, labor and machinery costs for fertilizer spreading, mowing, chopping and transport) fall for 1 ha of silage

maize € 1,072. At an average yield level of 44 t / ha corresponds to a price per tonne inclusive of 5% profit and risk surcharge of € 25.50 / t (Röder 2005) in Germany. Hungarian cost structure is highly dependent on the location.

6. Investment decision under uncertainty

Investment decisions are always based on the forecast of future values (recoverable proceeds to be paid expenses), which are always subject to uncertainty because of their unpredictability. Uncertainty means that the value of the target (eg, the net present value) clearly and unambiguously is not predictable, but be that several future values considered possible. If the uncertainty is not included in the investment calculus, wrong decisions, changes in feed-in-tariff system or gas and power prices, but also the selection of investment alternative can be the result (Mensch 2002). Uncertainty can be divided into uncertainty and risk. If there are no probabilities for the predictions are determined, a decision is available under uncertainty, but are the probabilities for forecast values known and used in decision-making, as is spoken of decisions under risk (Hoffmeister 2008). In order to incorporate the uncertainty in the investment decisions are in the investment accounting practice three methods to choose from: the correction method and risk analysis. The correction method is cope with simple methods the investment risk by putting all calculated and estimated values (input and output sizes) are provided with a surcharge or discount (Kruschwitz 2000). This method is very popular in practice because it is relatively easy to handle. A critical examination of this method, however, reached the conclusion that it is unsuitable for sound risky investment decisions. The reason lies in the arbitrariness of the flat and surcharges that are not derived analytically and that the security calculi often double in the bill incorporated (eg by increasing the calculation rate while reducing the intake values, Kruschwitz 2000). Because of its methodological weaknesses, the correction method is only useful for smaller scale projects, for which a high planning effort is not worthwhile. Therefore, the correction method is for this case study are not mainly considered. Used but it was in the 1.5 % inflation surcharge on payments made under the provisions of the periodic series of payments.

Risk analysis is a process by which hazards are and their causes Detected and are to be detected qualitatively and quantitatively their risks. The essential basic principle of risk analysis is to derive a probability analysis the output size of investment appraisal (eg net present value) and secure information about the relevant input variables (Hoffmeister 2008). First, the relevant uncertain input variables of investment appraisal must be selected. Subsequently, various environmental conditions must be defined and are generally assigned to them subjective probability assump-

tions for their entry (values between 0 (does not occur) and 1 (surefooted a), Hoffmeister 2008). Taking into account stochastic dependencies between the uncertain input variables then the probability distributions for the output size can be determined (Kruschwitz 2000). This can be done by simulative analysis method. However, these processes are so complex and diverse that it is beyond the scope of this work. The decision on the preferability of an investment alternative depends in each case on the particular risk attitude of the investor (Hoffmeister 2008). The selection of the input variables are regarded as uncertain investment expenditure, discount rate, useful life of the investment, sales volume, sales prices, expenditure fixed and variable costs and purchase prices available (Blohm et al. 2006). Investment expenditure discount rate, length of use should be considered in the biogas plant as a relatively safe levels. Sales volumes in the operation of a biogas plant electrical energy (electricity), thermal energy (heat) and the digestate (fertilizer). The amounts of energy (electricity and heat quantities) produced can be very accurately predicted and calculated according to the biogas and methane yields and the efficiencies of the cogeneration system. Also, the current paragraphs can be considered as not safe, because on the one hand, the renewable law requires the network operators to prioritize purchase of electricity produced and on the other hand, a rate is every year changeable and also dependent from the current power and gas prices which can be changed by the government even twice a year. The heat produced is a de facto a saving of other resources. It is a substituted fossil fuel oil, which would otherwise have purchased. Because the slightest substitution value has already been set (approx. 0.55 € per litre) and it is a purchase price which decreases as inflation and demand-driven rather increases, the more can be expected from a secure expectation here. Although the amount produced can be in the digestate also accurately predict and calculate, unlike the current or in the heat here is both the achievable sales volume as well as the selling price be uncertain. Finally, it can not be predicted whether the digestate ever find a purchaser and, if so, at what price. On the expenditure side the principle uncertainties was countered by an inflation premium has been mainstreamed by 1.5% in the analysis. Particular attention should however be paid to the substrate costs for the procurement of Silomaises. The raw material is subject to this experience, strong price fluctuations. On the revenue side of the series of payments is the paragraph of the digestate and on the expenditure side, the substrate costs are considered to be unsafe. Below are selected as uncertain input variables individually varied and the sensitivity of the net present value are examined for these fluctuations.

7. Summary and outline

Biogas projects can be financed by many different options. Each financing model has particular advantages and disadvantages for the investor and the financing bodies. It is very important for a successful implementation and operation to select the correct financing option for the regarding project. It has to be assessed very carefully, which costs occurs and which revenues can be expected from the operation of the biogas plant previously to the implementation of the project. This case study has a decision to invest in an agricultural biogas plant to the object. Examines this was the preferability of one of two mutually exclusive investment alternatives: establishment of a pure liquid manure fermentation plant with an installed electrical capacity of 150 kW as the first alternative or construction of a industry size 500 kW system, in addition silage maize to be fermented. The operation of an agricultural biogas plant has been demonstrated. The decision on the advantages - both in absolute and in relative terms - was made on the basis of specific investor objectives through appropriate investment appraisal method. As a suitable calculation methods were static and dynamic investment calculations and for the non-monetary goals, a cost-benefit analysis in consideration for financial goals. In preparation for the investment calculations dedicated earnings, revenue and cost investigations were necessary. As a result, the investment calculations, the second 500 kW biogas plant alternative was found to co-fermentation of silage maize as relative and absolute preferable, only she was able, the required monetary investors objectives, namely:

- capital value of € 1 million at a discount rate of 5 %;
- income (annuity) of at least € 100,000 a year;
- profitability of at least 10 %;
- internal rate of return of at least 5 % to meet.

A control performed by sensitivity analysis, investment decision under uncertainty led to a different result. Thus, the investment decision can be seen in the construction of the smaller biogas plant as a long-term economically viable perspective, especially when the legislative rules are under changes. Intervention in the energy sector would not mind if the government measures of efficiency, rationalization and reducing energy dependence would result. In contrast, the overhead reduction affecting the sector and other charges („Robin Hood" tax, utility tax) may point in the opposite direction: investment reduction, cut backs, cutting costs. The economic point of view it is already too raises social issues. The need for a solidarity based on ground support system for the technology developement and agriculture would probably be justified. The need for a long run program for the renewable energy is essential, otherwise the decision making process will run to absolute clear answer,

not to invest in vague conjecture and approximations. In the future - especially if the government is serious about the additional overhead reduction of 10 percent, so in overall 20 or even 30 percent cut would result common disorders in investments or even a provider exodus in the market. Meanwhile, the energy efficiency and agricultural development is not moving forward.

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11. Related variety research in regional economic development[1]

Zoltán Elekes

Significant attention has been paid to the notions of relatedness, related variety and unrelated variety in regional economic development research. Facets of (technological) proximity are at the core of theorizing on the sectoral knowledge spillovers of related industries and on the portfolio effect of unrelated variety in the robustness of the regional economy. The utrecht school, a stronghold of such research agendas, has thematized the debate by formulating related variety research questions and by developing the entropy-based methodology. Connections to the evolutionary economic geography discussion have also been established by the utrecht line of inquiry. This paper highlights key aspects of the research on related variety. It is argued that a more explicit attention to policy issues would be beneficial moving forward. Also evolutionary economics can further contribute to the theoretical foundation of the related variety concept.

Keywords: related variety, unrelated variety, regional economic development, economic geography

1. Introduction

The notions of related and unrelated variety have gained an ever so increasing attention from economic geographers in the international scene. This attention mainly followed the seminal paper of Frenken et al. (2007), examining the relationship between related and unrelated variety of sectors in the regional economy and the economic and employment growth of said regions. According to Google Scholar, this paper accumulated 599 individual citations in the course of the last six years, including approximately 150 last year. The several peer-reviewed articles published recently and the amount of working papers building on variety show that it is a relevant topic of vivid regional scientific discourse. The theoretical point of departure in

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Frenken et al. (2007) is that of agglomeration externalities and the key contribution of their work is in the methodology, introducing entropy measures to account for related and unrelated variety. Research on variety conducted by others mainly follows this methodological focus.

In spite of the recent influx of variety-based research in the international economic geography scene, appearance of this topic in Hungarian regional scientific discussion is still scarce, perhaps with the exception of Lengyel and Szakálné (2013). Present paper sets out to review the relevant literature on related and unrelated variety and *to see whether the contribution of these notions to economic geography resulted in "knowledge accumulation"* as phrased by Henning et al. (2013). After the discussion of the next few pages, some points of interest will be identified, that may be the focus of future variety related research agendas.

The paper is structured as follows. The next section highlights key characteristics of the concept of variety, including agglomeration economies, relatedness and technological proximity. In the third section reoccurring themes in related variety research and research questions are discussed, like competitiveness focus and regional branching. The paper concludes by a summary and a set of possible extensions to related variety research for future research agendas.

2. The concept of (related) variety

The spatial concentration of economic activities is a key feature in regional microeconomics. Firms clustered in the same locality receive benefits of different sources called agglomeration economies or agglomeration externalities. Following the reasoning of Frenken et al. (2007), present discussion of related variety departs from agglomeration economies as well. Different forms of agglomeration economies have been identified in economic geography. (1) Internal increasing returns to scale, understood as production cost efficiency stemming from a large market size. It is internal for the firm and so not in the focus of present paper. (2) Localization economies (Marshallian externalities), understood as external economies available to all firms of the same sector of a locality. (3) Urbanization economies, understood as external economies available to all firms, stemming from urban size and density. (4) Jacobs externalities, understood as external economies available for all firms, stemming from the variety of sectors in a region.

The different sorts of agglomeration economies yield different benefits for firms and their region. Based on the likelihood and nature of knowledge spill overs occurring, localization economies contribute to incremental and process innovation through knowledge spillovers within sectors (Lengyel–Rechnitzer 2004). Jacobs ex-

ternalities yield knowledge spillovers between related sectors, resulting more likely in radical and product innovation. Urbanization economies facilitate interactive learning between firms and other institutions of the local society, including universities, local governance and NGOs. According to Frenken et al. (2007), related variety is understood as the source of Jacobs externalities, while unrelated variety sums up to a portfolio effect for the regional economy, making it more resistant against asymmetrical sectoral shocks (Table 1).

Table 1. Sectoral relatedness and external economies

Degree of variety	**Similarity**	**Related variety**	**Unrelated variety**
Agglomeration externality	Localization economies	Jacobs externalities	Urbanization economies
Relational proximity	High	Moderate	Low
Effect in the regional innovation system	Incremental innovation	Radical innovation	Institutional coevolution
Effect on the robustness of the regional economy	Exposure to asymmetric shocks	Exposure to asymmetric shocks	Resistance to asymmetric shocks

Source: Own construction

Hence the central issue of theorizing on related and unrelated variety – and in turn on the occurrence and intensity of knowledge spillovers – is the understanding of relatedness. That is, when and to what degree can it be stated that two firms or sectors are in fact related or unrelated. While a formal approach to this problem has been devised in the entropy measure, it is important to highlight the roots of relatedness in appreciative theory as well. Breschi et al. (2003) argued that technological relatedness is the result of the firms learning process – intentional, based on search processes and unintentional, based on knowledge spillovers – and the nature of knowledge as a resource. Studies from the management literature on business portfolio relatedness are interested in firm diversification of economic activities (e.g. Tang–Rowe 2012, Shin–Shin 2013). Cassiman et al. (2005) conducted research from an industrial organization theory point of view on merger and acquisition and built upon technological relatedness as a form of synergy stemming from existing production processes and knowledge recombination possibilities. Piscitello (2000) argued that industrial and market relatedness aside, the firms role in selecting what is related and what is not in terms of activity is a strong selection process and a formative element of industries.

The degree of relatedness between industries and thus the significance of agglomeration economies arising is a translation of the geographical, cognitive or otherwise proximity of said industries. On the one hand, proximity and embeddedness

facilitates knowledge spillovers. On the other hand, distance between firms can yield flexibility, creative solutions and emergence of variety (Boschma 2005, Frenken 2009, Boschma–Frenken 2010). In this sense, strong proximity may also result in lock-ins, while weak proximity makes coordination difficult and renders the firms creative processes more isolated. In terms of agglomeration externalities, the first case is localization externalities in extreme proximity situations (i.e. firms of the same industry in the same locality). The second case is related variety with a fertile soil for radical innovation and the emergence of new industries. Technological proximity is central notion in the conceptualization of relatedness. According to Knoben and Oerlemans (2006, p. 77.):

> *"[Technological proximity] refers […] to the knowledge actors possess about these technologies. Similarities in technological knowledge […] facilitate technological learning as well as the anticipation of technological developments…"*

Again, the central issue is the difference in knowledge between firms regardless of this knowledge being codified, appearing as machinery or other artefact or being tacit represented in organizational routines, as suggested by Nelson and Winter (1982).

Finally, some authors from the field of international trade theory have shown interest in related variety of industries as well. There, a connection between export basket diversification and economic development (e.g. growth) is established. The role of export basket diversification in development is identified as a source of knowledge spillovers and a platform of interactive learning (Kadochnikov–Fedyunina 2013).

3. Themes in related variety studies

The lively discourse in the literature on related variety indicates that the concept sheds light on the important effect of similarity and difference in the regional economy. First it helps understanding how the difference of industries can contribute to employment, economic growth and overall competitiveness, the common goals of regional economic development theory. Second it holds key insights to the evolution of the regional economy. The specialization and diversification of said economy through the emergence of new industries and the disappearance of old ones (i.e. Schumpeterian creative destruction) is a path-dependent branching process best understood in its own historic context.

3.1. Competitiveness-based approach

Regional competitiveness has been identified as the central tool for welfare in mainstream regional development literature. It is understood as a composition of the regions capabilities to maintain relatively high employment rate and relatively high income (Lengyel 2010). The concept of competitiveness is the bases for evaluating the effect of related variety on regional economic performance. Since related industries are identified as the sources of knowledge spillovers more likely to result in radical innovation, they are also beneficial for economic growth. Likewise the emergence of new industries provides additional opportunities for traded sectors to attract additional income.

In the mainstream literature it is widely agreed upon, that in the case of regions in developed economies, related variety is beneficial for employment. New industries provide additional demand for labour and the presence of related industries makes it less likely for firms to exit their industry. Frenken et al. (2007) added that unrelated variety serves as safety net against unemployment in case of an asymmetric sectoral shock (Table 2). In the case of a transitional economy setting, Lengyel and Szakálné (2013) showed that in lagging regions related variety aggravated the employment conditions of a region, most likely because it reinforces negative-lock in patterns.

Table 2. Effect of related variety on aspects of competitiveness

Study	**Employment**	**Growth**
Boschma et al. 2010	0	+
Boschma–Iammarino 2009	+	+
Frenken et al. 2007	+	0

Note: "+" indicates positive, significant impact, "0" indicates insignificant impact, "-" indicates negative, significant impact

Source: Adapted from Kadochnikov–Fedyunina (2013, p. 7.)

3.2. Regional specialization, diversification and regional branching

The related variety concept can serve as bases for understanding the diversification of the regional economy over time. As firms diversify into technologically related economic activities or new firms appear through entry or spin-off process, the composition of the regional economy changes. This is a path-dependent branching process in the sense that the growth of new industries is anchored by the existing portfolio of economic activities. Also the exit of existing firms is affected by their relatedness to dominant economic activities. The description of this branching process

has been begun in increasing detail (see for e.g. Boschma–Frenken 2009, Boschma–Iammarino 2009, Neffke et al. 2011, Boschma et al. 2012).

In these attempts of accounting for the underlying processes of regional economic branching, it is commonly agreed upon that the technological relatedness of firms and their respective industries is based on knowledge. This knowledge is represented in organizational routines on the firm level (Nelson–Winter 1982), in the products of the firm and in the employee know-how. As research into regional branching indicates, new industries emerging from radical innovation build upon these existing firm competences. This may help explaining why industries growing out of a radical innovation tend to cluster in previously successful regions (e.g. bio- or nanotechnology in informatics hubs or the YouTube content producing community in Los Angeles). The concept of knowledge bases can be interpreted as an attempt to organize the knowledge particularities underlying relatedness (Asheim et al. 2011). In this sense, the related variety concept is deeply embedded in theorizing on knowledge, interactive learning and innovation systems.

A recent development of the smart specialization concept in the economic geography literature builds heavily on the concept of relatedness and its relevant research. Smart specialization is a notion adapted for economic geography by McCann and Ortega-Argilés (2011) with an explicit regional development policy focus. Relatedness is one of the building blocks of their approach: diversifying into related industries serves the robustness of the regional economy as well as enhances the possibility of knowledge spillovers. The growth of the regional economy can be fostered by the technological diversification of its embedded industries. As McCann and Ortega-Argilés (2011, p. 16.) put it:

> *"[…] the most promising pathways forward for a region to promote its growth by enhancing its technological capacity are by diversifying into technologies which are closely related to the existing dominant technologies."*

4. Conclusions and ideas for further research

The analysis of relatedness and variety is a promising framework for understanding regional economic change. The emergence of new industries and the innovativeness of existing ones, the specialization or diversification of the regional economy and the path-dependent branching process of the industry portfolio are explananda approachable with the concept of relatedness. The effect of related industries on the economy so far seems to be positive on employment, growth and overall competi-

tiveness. This makes the notions of related and unrelated variety attractive for regional economic development theory.

4.1. Interpretation for regional economic development policy

For the most part, empirical evidence based on related variety is rarely accompanied by regional economic development policy implications. The policy distance of ongoing research projects reflects in part the relative novelty of the variety concept. In this sense caution exercised by researchers about policy messages is warranted. On the other hand policy distance – in part – comes from a distance from normative goals in regional economic development research. As phrased by Markusen (1999, p. 873.):

> *"…regional research should be policy-relevant and concerned not only with efficiency but also with normative goals loosely considered 'progressive': equity; democracy; human rights; environmentally benign development."*

Frenken et al. (2007) briefly mention that regional policy supporting related variety may decrease the risk of selecting wrong sectors for the bases of regional economic development, since it is focusing on existing competences. On the other hand, the reinforcement of the existing economic base of a region may in turn aggravate an existing negative lock-in situation. As Lengyel and Szakálné (2013) suggest, this may exactly be the case with lagging behind regions of transition economies. Also the emergence of new industries may not follow the policy interventions based on existing competences and related variety. Or new related industries may appear on their own relying on said competences, as suggested by the window of locational opportunity concept of Boschma (1997), without using policy resources at all. Thus the clarification of the role of related and unrelated variety in regional economic development policy seems to be an important focal point in future research on variety.

While competitiveness is a widely used baseline for evaluating economic performance, other approaches can be taken up by the policymaker. The detrimental effect of related variety in a region in negative lock-in situation shows, that even within in the competitiveness framework, further research on different regions is welcome. Likewise the evaluation of interactive learning and regional economic branching on the bases of related variety could be analysed from a different standpoint. For example evaluation of related variety based on environmental sustainability could investigate the self-reinforcing impact of economic activity and regional branching on the local environment or society.

4.2. Insights on variety from Generalized Darwinism

The appearance of the evolutionary approach in economic geography contributed to several fields of discussion, including cluster dynamics, evolution of regional knowledge networks and regional development through economic branching (Fedyunina et al. 2014). It can be argued that the related variety approach itself is a contribution rooted in the evolutionary economic geography discourse. The existence and source of variety is a central issue in evolutionary economics and a process to be explained. Variation is considered one of few principles essential in evolutionary reasoning (Hodgson–Knudsen 2006, Stoelhorst 2010). These principles work in tandem, as Metcalfe and Miles (1994, p. 253.) put it:

> *"Progress depends not on chaotic generation of variety, but on focusing devices which constrain the development of technology into channels which have already been found to be productive."*

Although it is widely agreed upon that variety is a key contributor to the success of a population – a region in the case of economic geography –, the scope of its significance and its meaning is still unclear. Essletzbichler and Rigby (2010) collected a couple of meanings associated with variety including the variety of organizational routines, product and process variety and heterogeneity generated by innovation. Based on the related variety research explored above, variety of knowledge generated through interactive learning and employee movement, or variety of industries in a region are also applicable approaches when analysing the success of a population (e.g. regional growth, regional development). Whether these sorts of variety have a common element (e.g. knowledge bases) or they are different, and cannot be regressed into a single notion of variety seems undecided at the moment.

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12. Financial reporting in the new economy

Zsuzsanna Kovács

The fundamental objective of preparing financial reports is providing financial information for the users of reports, primarily to investors and creditors who use that information when making their decisions about allocating their resources. Living in the so-called new economy, it seems obvious to expect that information regarding knowledge assets will be found in these reports. However, actual financial reporting standards do not support the recognition of internally generated intangible items on the balance sheet. Voluntary disclosures are a possible alternative for firms who are willing to give information on their intangible resources to the stakeholders. The inflexibility of the regulations lead companies to developing intangible reporting practices that sometimes exceed the scope of financial reporting. Nevertheless, financial reporting is the only form of providing information that is based on the same standards and conceptual basis, making users able to compare data of different preparers.

The underlying research questions are: how the existing intangible accounting rules are applied in business reporting practice and which are the related features of the financial reporting culture in Hungary. As financial reporting regulations and literature associated with the topic has been investigated, the planned empirical research includes the collection of both quantitative and qualitative data. Based on the empirical findings of several international surveys, a similar research on a Hungarian sample will be executed using the data in the financial reports of entities. The objective is to measure the amount and quality of the information preparers disclose on intangible resources and to find association with some corporate-specific features (e.g. size, sector, book to market ratio, capital structure etc.). Examining the intangible reporting practices of larger companies also can serve as an input in the other line of the planned research, which involves collecting quantitative data regarding the intangible reporting culture of Hungarian firms. The expected outcome is the drawing of some proposals for the improvement of the intangible reporting culture of the smaller firms of the region.

Key words: financial reporting, intangible resources, knowledge assets, voluntary disclosure

1. Introduction

In theory, financial reports are designed to cover all information that users of reports need to make their financial decisions. According to the International Accounting Standards Board (IASB) which is the leading international standard setting body, the

objective of financial reporting is to provide financial information that is useful to investors and creditors in making their decisions about allocating their resources. That information includes data on the financial position, performance and cash flows of the entities, among which assets or resources of the companies are fundamental. The new economy – as we often call it – has brought intangible resources to the center of attention as they appear to be key factors of competition. However, the most widely used international financial reporting system, the IFRS defines recognition criteria that lead to a very limited set of intangible assets presented on the balance sheet. The reason for this is that intangible resources have some specific features that are very difficult to harmonize with the present framework of financial reporting regulations. This situation is apparent in different regulation environments, in international standards as well as in most country-specific regulations.

Companies' reactions to the difficulties related to intangible reporting are diverse depending on features like size, sector, profile, capital structure, etc. Large international firms often have significant intangible resources and are able to cover the cost of reporting such information, even in the form of voluntary disclosures. New reporting systems have evolved in the last decades to amend traditional financial information regarding topics of social responsibility, environmental issues, sustainability, value creation, etc. These voluntary disclosures or reports show an expedient, yet expensive example of putting intangibles in the spotlight. Yet, the ratio of these powerful companies among all participants of the markets is relatively low in many countries. Smaller or even say micro-size companies have fewer resources to allocate to creating annual reports. That does not imply that they do not have any intangibles to show. Is reporting intangibles only the game of big firms?

2. Intangible resources and financial reporting

The obvious way of reporting information on intangible assets is integrating them into financial reports. However, present financial accounting regulations seem to provide narrow space for intangibles on balance sheets. International Financial Reporting Standards (IFRS) issued by the IASB are applied in over one hundred countries including the member states of the EU. IFRS standards define recognition criteria that lead to a very limited set of intangible assets presented in financial reports. The definition of an asset derives from The Conceptual Framework for Financial Reporting, which defines the basic concepts of reporting (IFRS Foundation 2010, par. 4.4.): *'An asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity'*.

The definition of intangible assets is included in International Accounting Standard 38 Intangible Assets (IFRS Foundation 2012, par. 8.): *'An intangible asset is an identifiable non-monetary asset without physical substance'*.

The recognition criteria set by the Framework are the rules that specify which items are incorporated into financial reports, which involves the depiction of the item in words and by monetary amounts. Items that satisfy the recognition criteria are presented on the balance sheet or the income statement. According to the Framework the recognition criteria are the following (IFRS Foundation 2010, par. 4.38.): '*An item that meets the definition of an element should be recognised if:*

(a) it is probable that any future economic benefit associated with the item will flow to or from the entity; and

(b) the item has a cost or value that can be measured with reliability'.

Very few *internally generated intangible items* meet the recognition criteria because the economic benefits they incorporate are associated with high risk (i.e. the case of research costs) and measuring their value is a great challenge. Furthermore, they hardly correspond to the existing definitions, because intangible resources like competence experience and ideas of the workforce or technological expertise are not assets *controlled* by the companies. Basically, the only type of internally-generated intangible resources that appear on the balance sheet are development costs and know-how (protected by contract). Intangible assets that are of external origin (purchased, acquired as part of a business combination or by way of government grant) are much easier to place in financial reports as they are traded on the market, which makes them easy to identify, control and measure (i.e. brands, patents, trademarks, customer lists). However, the Framework for IFRS requires entities to enclose information on all items that are essentially assets but fail to meet the recognition criteria in case knowledge of the item is relevant to the evaluation of the financial position. Upton seizes the heart of the problem stating (Upton 2001, p. 70.): *'Is there any rationale based on the definition of an asset, why those items are assets when acquired in a business combination or other purchase and not assets when created internally? No. Genealogy is not an essential characteristic of an asset'*

As a consequence of the above described regulations, IFRS financial reports basically exclude internally generated intangible items or knowledge assets from the balance sheet. The structure and approach of *Hungarian accounting regulations* is different from that of the IFRS standards but the final results are very similar. Our Accounting Act gives a list of the items that shall be presented on the balance sheet in a specific format. The definitions given in the intangible section of the balance sheet are also tailored for acquired items. However, besides development cost, by

Hungarian rules, the cost of incorporation (start-up costs) and reorganization are also allowed to be capitalized in case the expected economic benefits exceed their cost. Hungarian regulations require entities to describe research and development activities in the company report, which supplements the data given in the financial report. Similarly to IFRS, the Accounting act also prescribes preparers to enclose information on off-balance sheet items that incorporate significant benefits or risk that influences the financial position of the entities.

Taking *small and medium size companies* into consideration, the international reporting standard setters have published a separate standard called IFRS for SMEs in 2009.[1] IFRS for SMEs includes similar definition and recognition criteria for intangible assets but expressly prohibits the recognition of internally generated intangible items. Hungarian accounting rules identify a separate types of financial reports for SMEs and micro-size entities. Small and medium size enterprises may opt to prepare reports under some simplifying rules and as a consequence have to include in the balance sheet only the overall amount of intangible assets and no compulsory disclosure on off-balance sheet items or research and development is required. However, they are allowed to supplement the financial information given is the balance sheet. *Micro-size companies* are allowed to prepare reports with even more reduced data, but any notes to the balance sheet are excluded in this type of report.

Basically we have a reporting framework (both on country and international level) that cuts off most internally generated intangible assets from the balance sheet and we do have a business environment that is considered to be built on knowledge. This seems to be a great contradiction. Lev (2003) summarizes the consequences of the mismeasurement or deficient reporting of intangibles:

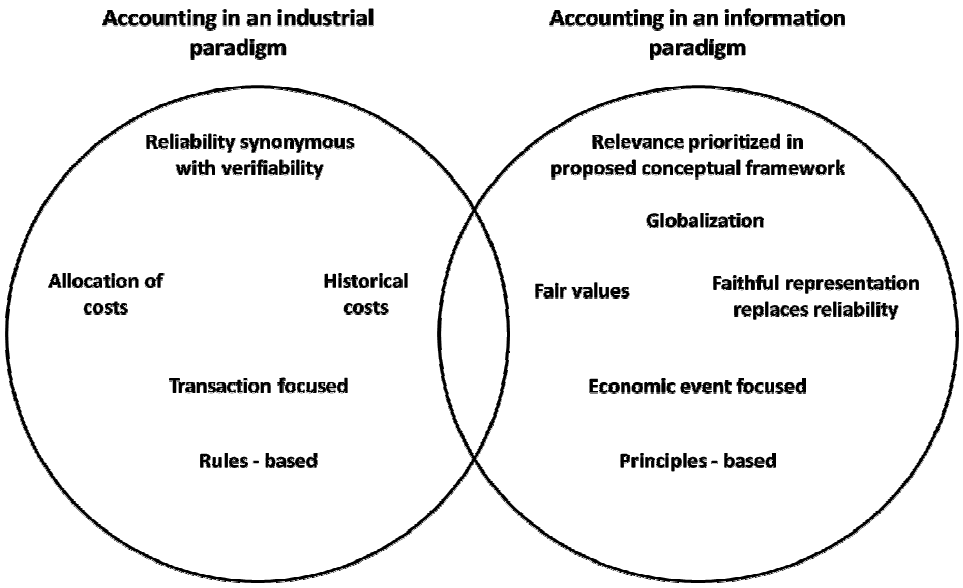
1. significant deterioration in the information content of key financial statement items;
2. managers looking for alternate measures of corporate performance for internal purposes;
3. systematic undervaluation of companies that are intensive in intangibles (excessive cost of capital);
4. gains are missallocated to insiders because of the great information asymmetry.

The standard setting bodies, the International Accounting Standards Board or the Hungarian legislative bodies face a great challenge if they intend to react on the critique that has been drawn lately. Studies about a possible paradigm-shift in finan-

[1] International Accounting Standards Board (2009): IFRS for SMEs is applied on a voluntary basis by entities, it is not mandatory for any conpanies in the EU.

cial accounting have been published ever since the 1970's (i.e. Wells 1976, Elliot 1992). Opinions given by accounting professionals show great differences, but the fact is financial reporting paradigm is presently undergoing some changes. Shortridge–Smith (2009) predict the specific characteristics of the new accounting paradigm which are: relevance, globalization, fair values, faithful representation and principles-based regulation (Figure 1).

Figure 1. Financial reporting paradigm shift



Source: Shortridge–Smith (2009, p. 12.)

Upton gives an extensive review on intangible reporting regarding the background, the basic definitions and the topics of the evolving new reporting paradigm, new metrics and intangible asset accounting. The author also highlights the focus to concentrate on (Upton 2001, p. 9.):*'We may have a new economy, or our new tools may have given us an appreciation of factors that were always important. It doesn't much matter which. The more important question is how to improve business and financial reporting'.*

In the following section some research studies will be introduced which all aim to find association between the level of disclosure of intangible items in financial reports of the sample companies and some country-specific or firm-related factors. These studies are all based on samples containing large firms, from different

countries and industry sectors. The data is collected by analyzing the intangible-related information disclosed by firms, usually in the narrative sections of the financial reports. In all cases some kind of self-constructed disclosure index is applied.

3. Preparers' point of view – international studies

Considering preparers and users financial reports, they have to align with existing regulations. As we have mentioned, the reporting framework includes some alternative choices for the entities therefore the application of the rules and the methodology of reporting might show some differences between companies. Those companies that have significant internally generated intangible property make their decisions about consigning such information to the stakeholders. As we have seen, financial reporting regulations do not support including these types of assets on the balance sheet. However, preparers have an alternative opportunity to supplement the data given in the financial reports: they can prepare any kind of business reports on voluntary basis. Totally new frameworks of business reporting have evolved over the last decade and some companies devote significant resources to disclose information on sustainable growth, corporate responsibility, human capital etc.

Annual reports created by firms that operate in different countries show the diversity of the reporting culture related to intangible property. Several international studies have been organized to find relationship between the amount of intangible items reported in mandatory or voluntary disclosures and other features of companies.

Ragini (2012) examines and compares various disclosure practices of the top one hundred Indian, US and Japanese firms over the period 2000-2005. The sample includes the first 100 most valuable companies of India in the Compedium of Top 500 Companies in India, 100 US, and 60 Japanese companies listed in the Fortune Global 500 World's Largest Corporations. The author creates a disclosure index of 180 intangible items classified into the following groups: research and development, strategy and competition, market and consumer, human resource, intellectual property rights & goodwill, corporate and shareholder information, environment and others. The study reveals that all countries show a significant improvement in their overall disclosure scores over the five year period. The author also analyzes group-wise disclosure and finds that Indian companies disclosed more information on 'research & development' and 'human resource' while US companies disclosed more information on 'strategy and competition', 'market and consumer', and 'IPRs and goodwill'. Japanese companies disclosed more on 'corporate and shareholder' and 'environment and others' (Ragini 2012, p. 57.). The study also discusses the associa-

tion between selected company attributes and overall disclosure scores. The results show that the disclosure score of the Indian entities are more associated with organizational size and profitability, while those of the US companies are more associated with industry type. In case of the Japanese companies, disclosure scores are associated with organizational size (Ragini 2012, p. 61.).

Kang and Gray (2009) examine the extent of intangible asset disclosure of emerging market companies. The source of their sample is the list of the top 200 emerging market companies in 2002 from the July 14, 2003 issue of Business Week. The authors analyze the narrative sections within the annual reports of the final sample of 144 firms. The dependent variable in the calculation is the level of intangible asset disclosure based on an index measured using the Value Chain Scoreboard elaborated by Professor Lev Baruch. The independent variables are different corporate and country specific features. The results of the study show that corporate-specific factors, such as the adoption of global (international) reporting systems (IFRS or USGAAP[2]), industry type, price-to-book ratio are the key factors significantly associated with intangible assets disclosure. Country-specific factors including risks associated with economic policies and the legal systems are also found to be of key importance (Kang–Gray 2009, p. 420.).

Kumar (2013) performs similar calculations on a sample of all U.S.-listed Asian companies in the year of 2007, totaling 74 firms from nine countries in the final sample. The results indicate that larger firms, firms with greater ownership dispersion, and firms with lower leverage provide more voluntary disclosure of intangibles information. Kumar also examines the effect of domestic culture on the level of disclosure incorporating two of Hofstede's cultural dimensions into the model. Results show that sample companies from countries that are more individualistic are providing higher voluntary intangible information (results failed to support the hypothesis related to power distance).

4. Planned research

The reason why international studies of intangible reporting focus on large firms is obvious: they are the ones that have the resources and are capable of preparing such reports. Part of the planned research is accomplishing similar analysis to those described in the previous section. An analysis on a Hungarian sample is planned using the same intangible disclosure index as Ragini (2012). Additional data on corporate-

[2] United States Generally Accepted Accounting Principles.

specific features (applied standards, size, sector, capital structure, market to book ratio etc.) of the firms will also be obtained from the financial reports disclosed by companies. The purpose of the work is discovering the tendencies of the largest Hungarian firms: identifying the groups of intangible items they are reporting. The data gained from the research could also help identifying some areas to improve and showing the best practice of intangible reporting among large firms.

The most numerous group of companies, the small and medium size entities are also possible subjects of research. Counting the intangible items is their financial reports would probably lead to less impressive results than the previously mentioned researches, but there lie some answers to be found considering SMEs too. A firm being small does not mean that it possesses no significant intangible property to report to stakeholders. In today's knowledge based economy start up activities are based on new technologies, ideas, implemented by qualified workforce, all of which are intangible resources. Many companies start small and perform phenomenal growth paces, which is impossible without investors or creditors who buy into the ideas they are selling. Investors and creditors are the primary users of financial reports, therefore these reports should serve as a tool of disclosing all the information they need. Does it really work that way?

The aim of the future research is to discover the financial reporting culture of the SMEs of the region. In order to gain some information besides the data of the financial reports, some qualitative research is planned. Questionnaires and interviews are appropriate research methods to answer the questions related to the following research topics:

- firms' opinion on the purpose of financial reporting;
- the usefulness of the narrative sections of financial reports;
- voluntary disclosures in annual reports;
- the relevance of the deficiencies of intangible reporting standards/regulations;
- identifying, registering and measuring intangible property.

The expected outcome of the planned research is creating a database on the intangible items reported by large Hungarian firms. The database could be used to execute some statistic calculations based on which comparisons are possible with the results of the mentioned international surveys. Examining the intangible reporting practice of larger companies also can serve as an input in the process of creating the questionnaire and interview questions for the survey related to smaller entities of the region. Those practices applied by domestic enterprises are easier to understand and embrace for smaller preparers, therefore these examples may facilitate the drawing of some proposals for the improvement of the intangible reporting culture of the smaller firms of the region.

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13. The triple nature of the crisis – Are growth-oriented economies able to handle it? An alternative: The theory of de-growth

Judit Dombi

The world has been facing an economic crisis from 2008 and is still trying to overcome it. The current crisis has two forgotten dimensions – social and environmental – which started decades ago.

Territorial and income inequalities are widening at all levels – global, national and regional – despite of the economic growth of the last decades. In addition, after meeting the basic needs – e.g. food, drinking water and healthcare – happiness does not correlate strongly with material well-being but rather with other qualitative factors influencing our lives.

Moreover, nature's carrying capacity is finite and we already caused several global problems like damaged ozone layer, climate change, and the overuse of other global common pool resources (rainforests, oceans). More than 20 years after the beginning of the discussions about sustainable development we are still unable to find an overall solution for the unsustainable environmental and social processes.

Current economies are growth-oriented based on the institutions of capitalism and most of us are waiting for the solution of today's problems from economic growth. But if growth is the problem itself, then it cannot handle these problems. Present capitalist economies are not capable of not growing because without economic growth they collapse and new problems emerge beside the aforementioned ones.

As an alternative, the theory of de-growth suggests that we should reconsider our goals and means. The actual growth-based economic system and its institutions should be restructured and new means should be used. The democratic and peaceful transition should help to move towards real sustainability.

Keywords: environmental crisis, social crisis, sustainability, capitalism, de-growth

1. Introduction

In the recent years the world has been facing an economic crisis. Still these days we can hear from many sources about the caused economic problems which are still un-

solved. Mainstream economists and politicians are waiting for the answer from economic growth.

We usually tend to forget that the current crisis has other two dimensions also – social and environmental – which started decades ago. What if growth is the problem itself of all the three dimensions of the crisis? Then we cannot wait for the answer from it.

The question is whether the present capitalist economies are capable of not growing or not. Currently it seems that they cannot. As an alternative, the theory of de-growth suggests that we should reconsider our means and ends. The actual growth-based economic system and its institutions should be restructured and new means should be used. The democratic and peaceful transition should help to move towards real sustainability.

In this paper first I introduce briefly the ecological and social dimensions of the crisis and point out that economic growth might be the problem itself. Then as another way, I introduce the alternative of de-growth and make an attempt to present its connection with capitalism.

2. The ecological crisis

Kenneth Boulding declares that 'anyone who believes exponential growth can go on forever in a finite world is either a madman or an economist'. We have been living on credit: according to the index of ecological footprint if everybody on Earth lived an American lifestyle we would need six planets (Latouche 2011).

Nature's carrying capacity is finite and we already caused several global problems like damaged ozone layer, climate change, and the overuse of other global common pool resources. Global common pool resources – Antarctica, oceans, rainforests, Earth's atmosphere and biological diversity – are in danger (Sachs 2005). The problem is that the price of natural resources is low and depositing the garbage is almost free. Specialization and commerce cause a decrease in agricultural diversity in traditional agro-societies. It seems that the environment mainly suffers from over-growth thus from over-use of the resources or from the over increment of human race, and not from the inefficient use of the resources. It is not enough to be more efficient as it causes just more use of the given resource – which we call as Jevons paradox – and then the situation is even worse. E.g. the number of cars is growing four times faster than the population of the Earth. Losing of ecological resistance potentially causes serious problems as the system will be less capable to hold up human existence and uncertainties are growing regarding the environmental effects of economic activity.

Many people are pushed to the periphery because of the expanding growth which causes drought, disappeared animals, fenced and ruined fields (Sachs 2007). Moreover these people have to show up in the urban markets where they have no purchase power, so poverty is all that remains. Hence, poverty is started to be correlated with the ruin of environment but we should not mix up cause and effect (Sachs 2005).

Latouche (2011) declares that growth is already not sustainable. Our economy has over-grown; people make waste from resources faster than nature produces resources again from trash. The worldwide ecological dept has increased from 70% to 120% from 1960 to 1999, and it is just rising as the lifetime of products is getting shorter and shorter (Arrow et al. 2005, Latouche 2011). Developed world continue to consume wastefully. 80% of the products on the market go to the dustbin after only one use which creates an annual 760 kg of household waste per person in the USA, while 40 kg paper based advertisement goes into the post-boxes. Currently developed countries produce all together 4 billion tons rubbish per year. The huge amount of freely or incorrectly deposed trash is poisonous and exceeds the ecological systems' natural anabolic capacity. It takes decades, centuries or more that these radioactive, PCB, CFC etc. materials state their effects causing diseases and global climate change. The losses are significant, irreversible and show asymmetric distribution in time. While revenues come in immediately, costs come up in the future (Spash 2005).

Goergescu-Roegen draws our attention that the law of entropy can be used in the analysis of economic processes. According to him it is important to take into account the biological, physical limitations of all economic activity, system or technology, and it is necessary to redefine what we call scarcity. In addition, we should take into account that the most of the processes of the economy is one-way, irreversible and indefinable from the aspect of society and environment, and the processes for the entire economy, – with today's word alive – the sustainability from social and environmental aspects. So economy should be treated as an opened system which interacts with its environment, and which uses low-entropy, valuable inputs, while the outputs are high-entropy and worthless. Hence, one of the targets should be the reduction of throughput (Pataki 2002a, 2002b).

3. The social crisis

Territorial and income inequalities are widening at all levels – global, national and regional – despite of the economic growth of the last decades. The poverty in the

world is huge; many people are not able to meet their basic needs – e.g. food, drinking water and healthcare.

When we are talking about social crisis we should mention not only the problems of the poorest people but the problems of the rich ones also. At this point it is important to take difference between material welfare and real well-being. While the previous concentrates on the material dimension, on affluence, the latter means an overall sense of comfort where income and consumption are just one of the components (Fitoussi et al. 2009). Living conditions, health, education, living environment, infrastructure, working hours, leisure time, social capital, personal relationships, democratic and citizens' possibilities, economic, political and environmental uncertainties, and subjective well-being should be taken into account also.

The growth in GDP of developed world and the multiplication of consumption per person do not cause necessarily an increasing proportion of well-being. In many cases the rising incomes do not involve decreasing working hours and increasing leisure time (Pataki–Takács-Sánta 2007). It would be necessarily to spend more time on other values, such as family and social relations. Thus, in addition that we excessively pollute our environment, it is not even certain that majority of the society feels itself good (Latouche 2011).

This is proved for example by the paradox of appropriation of consumption (Lindenberg 2005). Most of the ordinary commodities can be more or less expropriated. E.g. a family can use a bathroom in common but every member of it can have his/her own one. We can see the trend that the higher is one's income the more he/she appropriates his/her consumption. But what is so paradoxial in this phenomenon is that with the increasing expropriation people destroy certain forms of social appreciation which they cannot substitute own their own. If everything is totally expropriated e.g. in a family there is no need to share anything, and follow the norms of sharing, after a time the members of it will admit that they miss the 'good old times' when they were less rich but they were more important to each other. So as income is increasing sharing groups are shrinking. At the same time social norms, local traditions, ethnic specialties cannot be held up without them. Thus the personal ownership of a product or a service might cause pleasure in shorter term, but in longer term we pays heavily for it. So after meeting the basic needs, happiness depends on other qualitative factors influencing our lives, which are not necessarily correlated with wealth (Kallis et al. 2012).

Another proof is that the continuous redefinitions of social status holding up permanent tension in the society in global, national, regional and communal level too (Corrigan 2010, Csigó 2007). Usually the aim of our consumptions is not to break from the crowd but to reach a socially accepted honourable limit in quantity and quality as well (Veblen 1975). Do we really need these kind of situations, if yes,

in what extent, and how the enormous amount of promotion strengthen these processes, so they become unperceived a part of our lives.

Layard (2007) declares also that the determining factors of our happiness are rather our relationships with family and friends than our income. Our satisfaction of our income depends on how much the others earn, and what we are used to earn.

4. An alternative: the theory of de-growth

In section 2 and 3, I introduced the problem of continuous growth. As an alternative direction, the theory of de-growth appeared, introducing that the continuous growth is not desirable; moreover, in many cases it is specifically harmful.

4.1. The interpretations of de-growth

The meaning of the expression of de-growth can be defined from three different, mutually not exclusive aspects. From the first aspect it means a provocative slogan which message is that economic growth as the main social mean and end should be questioned, and we should get rid of the related usual mode of thinking (Latouche 2011).

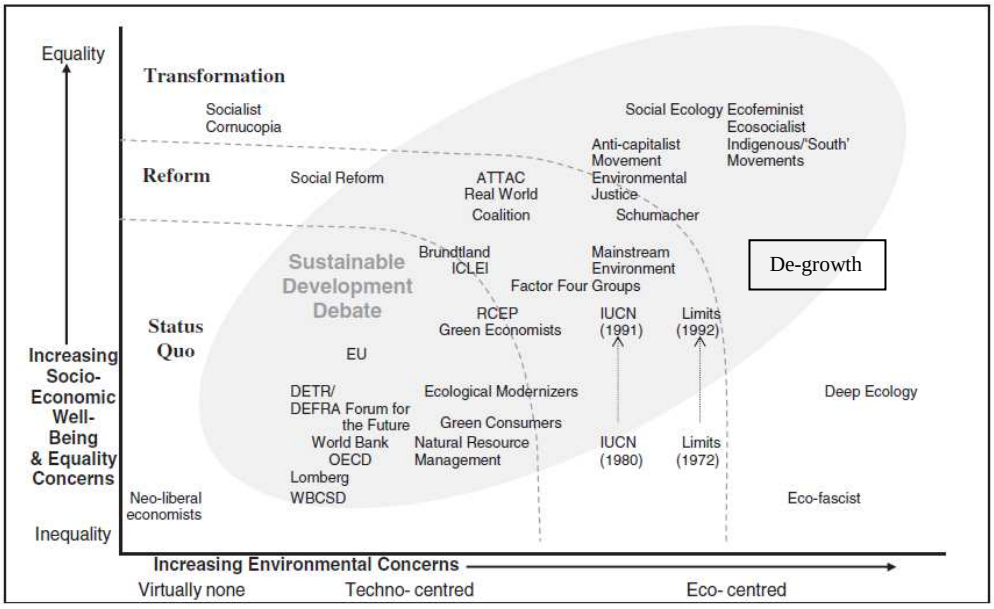
From the second aspect de-growth is a social movement; as the program of de-growth has become a scientific research field from a French civil movement which started in the early 2000s. In France a political party (Parti pour la Décroissance) is related to it, but it is not really decided whether it is closer to the right or the left side. Years later, this social and political ambition has become stronger; there are more and more countries where groups are organized along this principle, there are more and more related concrete alternative, and the scientific world organizes more and more conferences in this topic.

From the third aspect de-growth is a complex scientific theory which appeared as an alternative counterpoint of the challenges and tasks caused by continuous economic growth. The aim is a peaceful and democratic transition to a more equitable society and a more livable environment (Latouche 2011, Martínez-Alier et al. 2010). Today's mainstream economics accepts that permanent growth is desirable, whereas de-growth might provide a completely new paradigm. Today, everything and everyone – individuals, companies and institutions – operate along the same principle that growth is desirable. If growth rate reduces or stops – for example during recessions – it causes serious problems. The growth-oriented capitalist economies are unprepared for how to de-grow, during these times, as Kallis et al. (2012) write they collapse. That is, the GDP reduces, the unemployment rate increases, the currency weakens, the investments are uncertain, the public debt rises, the propor-

tion of emigrants increases, etc. Therefore the theory suggests the overall restructuring of the current growth-oriented economic system, but not de-growth in the present system (Latouche 2011). We should move on the dominant discourse, and we should get rid of the pressure of growth. The main objective of the transformation is a social and economic system where bigger well-being could be reached without the continuous growth in production and consumption, and where the environmental pressure would be significantly reduced.

Latouche (2011) hopes that the possible outcomes of the whole de-growth program would include the following: protection of the environment, greater well-being, less unemployment, less stress, more transparent production chains, reduction of dependency from multinational companies, increasing security in all aspects, strengthening democratic attitudes and participation in decision-making, opportunities for the Third World. The implementation could be started first in the field of food supply, and later it could be extended to a broader economic and financial self-sustainability also (Latouche 2011).

Figure 1. Mapping of views on sustainable development



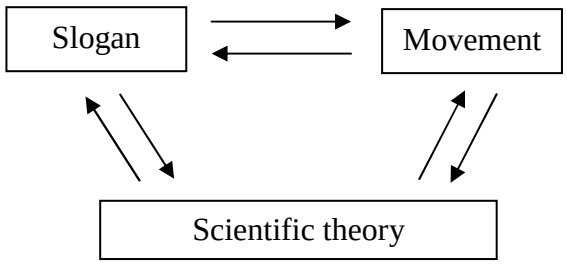
Source: Own construction based on Hopwood et al. (2005)

Hopwood et al. (2005) figure summarizes a set of theories about sustainable development. On the vertical axis we see how important a theory considers well-

being and social equity, while on the horizontal axis how much a theory focuses on environment. The figure shows a third dimension that what kind of changes a theory considers necessary: status quo, reformist or transformative. If we place the theory of de-growth in this figure, it would be in the upper right-range, in the transformative category. De-growth is probably more sensitive towards the environmental problems than towards social problems.

The three approaches of de-growth cannot be sharply separated, since they continuously interact with each other, thereby they repeatedly fertilizes the thoughts related to the topic. This process is illustrated by Figure 2.

Figure 2. The relationships of the approaches of de-growth



Source: Own construction

Although the three interpretations cannot be clearly distinguished, the rest of the paper primarily deals with the approach of scientific theory, but of course the theory is closely related to movements which can also be considered means. After introducing shortly some means on different levels the paper focuses on the connection of de-growth with capitalism.

4.2. The levels and means of de-growth

The changes following the principles of de-growth has already been started. Several attempts, means can be experienced which are certainly waiting to be improved, but a process has begun. For example, in Spain several initiatives have been started (Amate et al. 2013, Cattaneo–Gavalda 2010). The steps for the implementation of the ideas of the movements can be grouped into four main categories, depending on which level of the society is affected. This is the point where scientific theories and movements continuously interact with each other, so there is no strict boundary between the two aspects.

On the individual level the program can be described as a lifestyle, a form of life where the participant voluntarily take on simplicity and a sustainable mode of life which can be as a form of symbolic consumption and which does not mean asceticism, nor that from now he/she cannot has beautiful dresses, low-energy tools, cannot go for calm and relaxing holidays and cannot eat delicious foods (Málovics–Prónay 2008, Kallis et al. 2012). As Veblen (1975) stated also the aim of a significant portion of our consumption is ostentation and status-gaining which might be one of the keys to the global ecological crisis (Flipo 2008). Thus citizens of the Western civilization have to sober urgency, starting with the richest ones' responsibility. The program does not mean retrogression or setting back an earlier era of history but the realization of the principle "better from less" (Matthey 2010).

Thinkers of de-growth strongly believe in bottom-up initiatives, so in the community level. It is important to rethink the redistribution and the recycling of goods organized from the bottom (Schneider 2008). It is worth to look back, learn from former societies – natural tribes, hunter-gatherer societies – in order to be able to respect more each other and the nature (Gowdy 2007). Innovative models of local life are needed (Kallis et al. 2012). New means can be: the model of cohousing, local currencies, localized production and supply systems, self-sufficient organizations, small-scale sustainable agricultural production, new forms of coexistence, community gardens, etc. (Liegey et al. 2013, Lietaert 2010, Longhurst–Seyfang 2013). Every kind of attempt for new models of production and consumption which would serve the aims of de-growth should be supported.

Means are needed on national level as bottom up strategies cannot be efficient without top-down actions (van den Bergh 2011). Despite many scientists have criticized the indicator of GDP, governments on the national level intend to increase it – this is called as the paradox of GDP. So beside a fundamental change in the attitudes, adequate information-transfer is required from science to society, education and the media, and opened public discussions are necessary for the acceptance of the conceptions. At these higher levels of governance, it would be important to recognize and admit the financial, physical, natural, infrastructural and time limitations, and national and international strategies should be developed in accordance with them (Schneider 2008). According to the scientific literature basic income is considered a very important mean which can be connected mostly to the national level, but it can be connected even to the communal level also. Launching basic income could help on poverty, unemployment, uncertainty and even on those who always work over (Mylondo 2008).

On the international level multilateral agreements and relevant Community policies are needed to be successful (van den Bergh 2011). Many pollutants – such as greenhouse gases – cause global problems which cannot be handled by only one

country. On international level we should take differences which countries have to de-grow. Of course, in a certain scale and type, so called selective growth is needed in the southern countries (Foster 2011, Kallis et al. 2012, van den Bergh 2011). In many societies the basic needs – drinking water, food, healthcare – are not met. Therefore the de-growth expectations (reduction in consumption and production) towards the western countries cannot be applied to them, but instead a new sustainable development path should be worked out which does not lead to the same impasse as the path of western societies.

5. De-growth and capitalism

The common vision of de-growth researchers that economy should get in a kind of state which can be considered sustainable socially and environmentally too. So the program is not an aim, but primarily a process which appoint the way for it. In order to really start this process it is necessary to identify the institutional and technological limitations that are currently inhibit this way (Griethuysen 2010).

First, one of the pillars of the capitalist model of development, the institution of property should be examined. Two main potentials of the property can be defined. One is the potential of possession which provides the right to have a say in a matter, and a variety of other rights. The other is the potential of the propriety itself, which gives the possibility of getting and giving credit. The latter allows the actors of the economy to extend his/her economic activity or invest in new ones which is a cumulative process as more property and status can be acquired (Griethuysen 2010). However, this process does not only allow growth, but also forces it since the credits with their interests have to be paid back on time. At this point the problems are connected to monetary system's problems. Those debtors who are unable to pay their credit back on time are selected out of the property-based economy. Creditors give the impulse for further expansion of the capitalist economic system by choosing the activities to be financed, so innovations are profit-driven. In this process the ecological and social aspects are effaced thus it is difficult to imagine "win-win" strategies, so social differences are widening, social hierarchy is strengthening. This process is path-dependent which implies this development path where there is no internal limitation and which seems to lock in because it cannot handle the caused problems. The limitation should arrive from outside, we should intervene in this process and redefine the legal limits of the economic system (Griethuysen 2010). During the transition very low or zero interest rates should be considered (Kallis et al. 2012).

According to the previous thoughts an eco-compatible capitalist system in practice does not seem realistic (Foster 2011). But the main cause of environmental

degradation is economic growth, and the capacity of the environment cannot be increased, and the environment cannot be substituted perfectly, which is called as strong sustainability theory. A de-accumulation process should be started stopping the concentration of capital without limitations which strengthens a kind of modern caste system. However in such a process the questions of succession should be handled with special care.

According to Lawn (2011) the capitalist system mainly depends on its institutional framework which supports and forms it, thus many kind of the system can be imagined. By re-planning it a green, dematerialized capitalism can be developed which can support the steady-state level.

6. Discussion

The present crisis which is a triple crisis – so not only economic but social and environmental also – might help us to take ourselves some basic questions like 'Where we are?', 'How did we get here?' and 'Where are we going?' (Kallis et al. 2010). Everyone should have the right to live a good, enjoyable, qualitative life on intra-generational and inter-generational level also. The current growth-oriented world rather threatens it that give appropriate conditions and framework for it. Although social classes, differences have always been, and probably there always will be, the extent of the difference should not be ignored.

It is a question that where and in which direction the theory of de-growth will change. There is many coercive forces that changes have to be made on the current system. However, to be able to start the process, politics, social attitudes, institutions and actually everything should work for the new aims, so that the theory would be widely accepted and would put in practice. We need to find the democracy of de-growth. Johanisova–Wolf (2012) economic democracy might be good for describing it: 'a system of checks and balances on economic power and support for the right of citizens to actively participate in the economy regardless of social status, race, gender, etc.'

If we cannot change the current economic and social system, everyone – individuals and companies – has an interest in growth which is a treadmill where there is no exit. This process – the coercion of growth – can be described by theory of 'treadmill of production' (Gould et al. 2003). Another big question is that if the aims of de-growth can be achieved within the framework of capitalism, as capitalism is about agglomeration from its definition, a social system where private property and market transactions dominates (Kallis et al. 2012, Trainer 2012).

De-growth does not have only one, perfectly defendable definition, currently it is not a specific, single alternative but a matrix of various alternatives which opens a space for creativity raising the heavy blanket of the present economic system (Latouche 2010). De-growth is a complex method of treatment which aims to take into account economic, financial, social, environmental, cultural and civilizational aspects.

The different notions of de-growth agrees that in order to achieve a better future – from the aspect of society and environment also – this program or a similar must play the key role, and many people thinks this process seems inevitable. It is important to note that as our problems are serious and difficult to solve, the mainstream economics should also consider it. The solution is probably the result of the variation of many ideas which tolerate and understand each other. As Martínez-Alier et al. (2010) wrote we must ask the question that would we like to follow the business as usual which promise less and less good for future, or would we like to work on a currently utopian but livable system? After all, the current growth seems unrealistic in the long run (Kallis et al. 2012).

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