After the transition

"Due to change having been approached from the point of view of the winners-losers relationship, transformation as a real process was not a reformation per se, but a dislocation of the internal mechanisms for the relocation of the external ones."

The big transformation for the countries of Central and Eastern Europe (CEE) persists as a problem for which there are no decided solutions, and not only on the economical side. After almost two and a half decades, the trajectory that was followed without hesitation was proven to have a cumbersome finality. Thus, the optimism for deliverance stood corrected, the traction power of the system being proven profoundly asymmetrical in European terms.

Covering the arguments by their positioning comes less and less from common sense, with the background noise of the ideological confrontation being the one restarting to cover the nuances in the configuration of public opinion. By the evolution of things it is hard to tell what the result will be, as the invoking of freedom is becoming much too abstract on the background of the sine die postponement in recovering the gaps in development.

The fault line between the frenzy of freedom and the development deficit cannot be covered much longer by the enthusiasm stimulated by promises. With the simple judging of the previously and currently used means being not – paradoxically for freedom – a preoccupation exercised in the open, the risk of limiting the pool of adherents to the employed model of change is being exacerbated.

The model might not have been completely adequate. Some less than orthodox, yet growth generating examples of change, strengthen the feeling of failure. In the CEE, where compliance to the market system was done mechanically in the initial phase, in a manner similar to changing the wheels on a Formula 1 car during a mid-turn, was followed in a second phase by a covering of the market flows, following the principle of communicating vessels.

Somewhat unexpectedly, yet unavoidable when the approach to change was done according to a winners-losers type of relationship, transformation as a real process was not a reformation per se, but a dislocation of the internal structures for the relocation of the external ones. Instead of the emergence of the market as the

regulating mechanism of the restructured economy, the market made by the global actors was extended. The economic agents and the social factors which acted as wealth generators by making functional the indigenous wealth producing potential became at most secondary in nature. The direct consequence was not the eradication, but the change of direction of these dependencies.

At first the heroism of change was truly functional, but the result in real life was a derailment from the track of development. Modernity's break towards maturity, which seemed to be the promise of transition, was diminished by going through a new experimental path in private property in which the costs of change were fatally multiplied. Fixing the past has turned into a burdening of the future under the guise of an insistent ethical motivation. In fact, post-communist economies have become – by way of politically induced de-capitalization – the new frontier of the consolidated markets. Companies with special strategies for expansion, many of them belonging to murky geostrategic projects, set the rules of the game.

It is certain that for the CEE inhabitant the result at the 1/1 scale of post-communist transition is too different from the expectations and too insignificant to rekindle the motivation. For the critical mass, whose function is gaining importance, the freeze-frame has become the lucid method for evaluating successes and failures. And there aren't any signs that this is happening exclusively in order to reopen the horizon which would resonate with a real project for returning to the winning path of modernity. It is hard to dispel the belief that the CEE inhabitant's hopes are being abandoned anew in a grey area by those who were the initial recipients of the drive for change.

The impression of failing the great transformation comes from something impossible to understand in the Occident: the memory of the experiment. The CEE countries have a common dependency to the path, the emotion of violent change is instantly awakened, it indistinctly blocks and moderates initiatives which were insufficiently explained to be understood. The suspicion of something else destroys rational debate. Communication is caught between the excess of emotion and the mistrust of statements, even the well-intended ones.

If we are to point out, in everything that surrounds us, the most useful thing in traversing a world of doubt, then that is the habit of rejecting the ideal. Doubt, raised to the level of state policy, is specific to the communist detour towards which the CEE population was pushed in the second half of the last century. In Central and Eastern Europe, morality has only the form of the nicely shaped word, rolling over the instinct of conservation. Double talk is overimposed on hopes and needs. The former pertain to the experiencing of the ideal states of mind,

repressed after proven to be deceitful, with the latter being the ingredient for the life which must be lived under any conditions, at any price, as a survival-of-the-species model.

The recent memory of the social experiment shapes attitudes, behaviours and mentalities towards assimilating the crisis. The resilience to shocks has become so great that everything is borderline placed. Whether advancing or retreating from the project, changing the direction of travel has an equal chance of yielding a winner or a loser. Ending this draw of history is possible only by synchronizing perspectives. The West and the Rest were alternatives built on the logic of adversity! Why does it continue to be so after the transition?

Marin Dinu

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The impact of oil prices on sectoral returns: an empirical analysis from Borsa Istanbul

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Abstract. *Oil prices affecting production costs, inflation rates and therefore economic growth have a direct impact on stock market returns. In the last two decades sharp increases in oil prices led way to stock market collapses which were transmitted to the global economy as downturns. This paper examines the relationship between crude oil prices and sectoral returns of 18 sub-indices from Borsa Istanbul. We use monthly data for the period between January 2002 and April 2013. We apply multivariate time series analysis by conducting VAR (Vector Auto-Regression) and VECM (Vector Error Correction Model) methodology to explore the short-run and the long-run dynamics for the series under investigation. We also employ impulse response and Granger causality methods to investigate the structural relationship between the variables. We figure out a long-run equilibrium relation and a uni-directional causality from oil prices to chemical-petroleum-plastic sub-index as oil prices directly affect the revenues of the companies operating in this sector. For the other sub-indices the empirical results suggest no long-run equilibrium relation.*

Keywords: sector indices; vector autoregression; vector error correction; impulse-responses; forecast error variance decompositions.

JEL Classification: C32; G10.
REL Classification: 15F.

1. Introduction

The world has experienced extant financial crises for the last two decades, namely the Mexican crisis (1994), the Asian crisis (1998), the Russian crisis (1998), the Brazilian crisis (1999), the Argentine crisis (2002), the US subprime crisis (2008) and the Greek crisis (2010) which diverted the stock markets to excessive volatility and to turmoil. Stock markets are of significant importance in any economy as a medium through which capital allocation to real economy is enhanced fostering economic growth. Stock markets also provide a mechanism to increase efficiency through reallocation of funds from the ones with weak performance to the more profitable ones. The discounted cash flow approach in stock pricing suggest that future expected corporate earnings determine the stock prices, which are directly linked to economic activities.

Oil prices affecting production costs, inflation rates and therefore economic growth have a direct impact on stock market returns. Huang et al. (1996) argue that oil prices, acting as a major determinant of production costs, affect firm profitability, hence dividend payments, and stock prices. In a microeconomic view, rising oil prices negatively impacts earnings of firms which use oil directly or indirectly in the production process. From the macroeconomic perspective, increasing oil prices brings inflationary pressures and central banks increase interest rates to control the inflation. Rising interest rates leads to stock price decreases as the interest rates have direct effects on the discount rates in the equity pricing formulation. Many researchers evidence significant and profound impact of oil prices on stock returns; however at varying magnitudes between different industries (Hamilton, 2003, Lee, Ni, 2002, Davis, Haltiwanger, 2001).

Hamilton (1983), documents that sharp rises in oil prices cause worldwide recessions and stock market collapses. The last two decades have witnessed unprecedented swings in the price of oil. The fluctuations in oil prices are the results of the global demand shocks, the demand growth of China and India and the recession in the US and European economies due to the sub-prime mortgage crises; or the supply shocks mainly stemming from the US invasion of Iraq and the output decisions of OPEC countries.

There is a vast literature amplifying the asymmetric and adverse effects of oil price shocks on the stock markets, distinguishing between the effects of demand-side shocks and supply-side shocks. A demand-side shock is eventuated by an increasing demand for oil in the world in general, like the one in 2008, which arose from the growing demand of China. A wealth transfer from the oil-importing countries to oil-exporting countries eventually slows down demand and attenuates economic activity in oil-importing countries which also deteriorates the cash flows to oil-exporting countries. A supply-side shock results from major

supply decisions of oil producing countries, which are highly affected by political actions. The US invasion of Iraq in 2001 induced a supply-side shock where rising oil prices reduces the availability of a key input, aggrandizing uncertainty and distress (Sadorsky, 1999, Brown et al., 2002, Arouri, 2011, Park, 2007, Scholtens, Wang, 2008).

Although there is a vast body of literature implying that oil price rises adversely affect stock prices, some studies argue that oil prices have no significant impact on stock prices or the effect may even be positive. In line with this school of thought, Al-Fayomi (2009) examine the impacts of oil prices on stock returns in Turkey, Tunisia and Jordan, which are all net oil-importing countries and find that oil price changes have no significant effect on stock returns in these countries. Moreover, some studies point out that oil price hikes are seen as signals of stronger business performance and are associated with booming economy, as the rising global demand stimulates global economic activity through increased demand for resources such as labor. Rising demand for labor brings higher wages and more spending which contributes to the growth of overall economy. Thus an increase in oil prices along with economic growth has a positive effect on stock returns (Yurtsever, Zahor, 2007, Gogineni, 2010). Narayan and Narayan (2010) also argue that oil prices have a positive and statistically significant effect on stock prices in Vietnam.

Different time spans included in various studies provide different repercussions. Welch and Goyal (2008) assert that positive predictability results may depend on samples that include the 1974 oil shock resulting from the output decisions of OPEC countries. Jones and Kaul (1996), Sadorsky (1999) and Park and Ratti (2008) provide evidence of a negative relationship. Fan and Jahan-Parvar (2012) distinguish between the first and the second order impacts of oil price fluctuations on stock index returns. According to the authors, fluctuations in oil prices as a direct factor of production have a first-order impact on the profitability of various sectors, furthermore, they argue that because of the predictive power of oil prices on GDP, oil price variations have second or higher order impact on the cash flows to all businesses.

Other than different stock markets, different industries should react distinctively, whether oil is used as an input or it is the output of a particular industry. The level of the competition and demand elasticity arbitrate the degree of transmitting rising oil prices to end customers, which in the end determine the cash flows to the industries. Although oil price shocks led to recessions in industrialized economies during the 1970s, “The Great Moderation”, a phenomenon which argues that oil price shocks only have a limited effect on macro-economic indicators, finds support from many researchers. Jimenez-Rodriguez and Sanchez (2005),

Blanchard and Gali (2007), Kilian (2008), Kapetanios and Tzavalis (2010), Nakov and Pescatori (2010), Gomez-Loscos et al. (2011) all evidence the above phenomenon after 1980s. International Energy Agency (2006) asserts that firms are more prone to absorb higher input costs in production without increasing their output prices as the result of increased productivity and investments in renewable energy sources. Furthermore, due to the contemporary conditions in the labour markets, wage flexibility helps to minimize the effects of oil price shocks as suggested by Nordhaus (2007). Thus growing literature in neoclassical theory finds out minor or no effect of oil price shocks on stock markets, especially after 1980's (Hamilton, 1983, Bernanke, Gertner, Watson, 1997, Blanchard, Gali 2007, Lescaroux, Mignon, 2008).

This paper aims to investigate the relation between oil and BIST (Borsa Istanbul) sub-index returns. Previous studies either relate returns or volatilities of aggregate or sectoral market indices in developed economies to oil return shocks, while our effort is in line with these previous studies, by analysing the relationship between oil price shocks and the Borsa Istanbul industry returns by using a VAR (Vector Autoregression) and VEC (Vector Error Correction) models. We use monthly data for 18 industries classified by BIST classification system between the period January 2002 and April 2013. We probe industry responses to oil price shocks by impulse response functions and variance decomposition analyses.

This study contributes to the literature by an extensive analysis of the relationship between oil price shocks and Turkish sectoral indices, with 18 sub-indices under investigation. Previous literature concentrates on developed economies while our concentration is on an emerging market of an oil-importing country. Furthermore, Turkey, as an emerging market, has suffered from high inflation and trade deficits almost for the last four decades and oil price shocks surmount the inflation and interest rates in the Turkish economy pressurizing political authorities to come up with rigid fiscal policies to remedy.

The remainder of this paper is organized as follows: Part II describes the data set and the methodology; Part III presents the empirical results and discusses the findings; Part IV concludes the paper.

2. Data and methodology

2.1. Data

Our data consists of Brent oil prices and 18 selected sub-sector indices from Borsa Istanbul (BIST Banks (XBANK), BIST Electricity (XELKT), BIST Leasing-Factoring (XFINK), BIST Food&Beverage (XGIDA), BIST Real Estate

Investment Trusts (XGMYO), BIST Holding&Investment (XHOLD), BIST Wood, Paper, Printing (XKAGT), BIST Chemical, Petroleum, Plastic (XKMYA), BIST Basic Metal (XMANA), BIST Metal Products , Machinery (XMESY), BIST Wholesale and Retail Trade (XTCRT), BIST Textile, Leather (XTEKS), BIST Tourism (XTRZM), BIST 100 (XU100), BIST Services (XUHIZ), BIST Transportation (XULAS), BIST Industrials (XUSIN) and BIST Technology (XUTEK)). The first data set used for VAR and VEC models is monthly between the period January 2002 and April 2013, hence we have 136 observations for each of the variables. Brent oil data is from International Energy Agency (IAE) and BIST sub-sector index data are from Borsa Istanbul. Sub-sector indices and Brent oil prices that are cointegrated are in levels. The other series are converted to log returns defined as Rt= log(Pt/Pt-1). Sub-sector indices are value weighted portfolios consisting numerous individual companies, thus each sub-sector index is an aggregate measure.

2.2. Methodology

We employ a Vector Autoregressive (VAR) model which was popularized in time series econometrics by Sims (1980) and seen as a natural extension of univariate autoregressive models (Brooks, 2008). All the variables are treated as endogenous variables in the system. Hence the identification problem is avoided.

The mathematical representation of bivariate VAR (1) model is;

$$y_{1,t} = \alpha_{11} y_{1,t-1} + \alpha_{12} y_{2,t-1} + \varepsilon_{1,t}$$
$$y_{2,t} = \alpha_{21} y_{1,t-1} + \alpha_{22} y_{2,t-1} + \varepsilon_{2,t}$$

In matrix notation,

$$y_t = A_1 y_{t-1} + \varepsilon_t$$
$$A_1 = \begin{pmatrix} \alpha_{11} \alpha_{12} \\ \alpha_{21} \alpha_{22} \end{pmatrix}$$

where, y_t is a k vector of endogenous variables, A_1 is a matrix of coefficients to be estimated and ε_t is a vector of shocks, uncorrelated with their own lagged values and all right-hand side variables. The coefficients of the VAR system can be separately estimated by ordinary least squares (OLS).

Cointegration relationship between oil prices and sector indices is tested using Johansen cointegration test (1991). Applying Johansen's vector error-correction model, we investigate the dynamic association between oil prices and BIST sub indices. As explained by Maysami and Koh (2000), even though Engle and

Granger's (1987) two-step error-correction model may also be used in a multivariate context, the VECM yields more efficient estimators of cointegrating vectors, since it is a full information maximum likelihood estimation model, which allows for testing for cointegration in a whole system of equations in one step and without requiring a specific variable to be normalized. The Johansen vector error correction mechanism prevents carrying over the errors from the first step into the second, with the additional advantage of not restricting any assumptions of endogenity or exogenity of the variables. If a linear combination of nonstationary variables is stationary, they are said to be cointegrated. Also, the variables converge to equilibrium through time and this situation implies the presence of long run relationship. If the variables are cointegrated, vector error correction model must be employed in order to capture the variations associated with adjustment to a long term relationship (Chang, Wong, 2003). A significant and negative error correction term implies that any short run variations between the variables will bring a stable long term relationship.

We use the vector error correction model (VECM) in the following form;

$$\Delta X_t = \sum_{i=1}^{k-1} \Gamma_j \Delta X_{t-j} + \alpha\beta' X_{t-k} + \mu + \varepsilon_t$$

where variable X_t is an n vector of endogenous variables with same order of integration; Δ represents the first difference; k shows the length of lag; Γ_j is an nxn matrix of coefficients to be estimated and μ and ε_t are the intercept vector and i.i.d. error term, respectively. Besides, α is an nxr matrix indicating the speed of adjustment and β represents the cointegrated matrix.

The coefficients of standard VAR and VEC models are difficult to interpret. For this reason, generalized impulse response functions (GIRFs) and variance decompositions (VDCs) can be utilized to summarize the relationship between the variables. Generalized impulse response functions are invariant to the ordering of the variables in the system and show the effect of an exogenous shock of one variable on the other. IRFs can be interpreted as dynamic simulations of the response of an endogenous variable over time. In this way, we use IRFs to investigate the impacts of oil price shocks on sector indices in Turkey.

A VAR can be written in vector form of MA() as;

$$y_t = \mu + \varepsilon_t + \psi_1 \varepsilon_{t-1} + \psi_2 \varepsilon_{t-2} + \ldots$$

$$\psi_s = \frac{\partial y_{t+s}}{\partial \varepsilon_t'}$$

In the above formula, the row *i*, column *j* elements of Ψ_s determines the outcomes of a one unit increase in the *j*th variable's shock at date *t* (ε_{jt}) for the value of the *i*th variable at time t+s ($y_{i,t+s}$), holding all other shocks at all dates constant.

A plot of the row *i*, column *j* element of Ψ_s

$$\frac{\partial y_{i,t+s}}{\partial \varepsilon_{jt}}$$

as a function of s is called as the impulse response function.

Variance decompositions (VDCs) analysis is the complement to impulse response and provides a compact overview of the models' dynamic structures. VDC displays the contribution of each source of shock to the variance of the future forecast error for each endogenous variable. VDC analysis splits the forecast error variance of a variable to its own shock and other variables' shocks in the system. Thus, in our study, it examines the impact of oil price shocks on the variance of sector indices.

Particularly, s-period ahead forecast error from a VAR can be written as;

$$y_{t+s} - \hat{y}_{t+s|t} = \varepsilon_{t+s} + \psi_1 \varepsilon_{t+s-1} + \psi_2 \varepsilon_{t+s-2} + \ldots + \psi_{s-1} \varepsilon_{t+1}$$

The mean square of the forecast is,

$$MSE(\hat{y}_{t+s|t}) = E[(y_{t+s} - \hat{y}_{t+s|t})(y_{t+s} - \hat{y}_{t+s|t})']$$

$$= \Omega + \psi_1 \Omega \psi_1' + \psi_2 \Omega \psi_2' + \ldots + \psi_{s-1} \Omega \psi_{s-1}'$$

$$= PP' + \psi_1 PP' \psi_1' + \psi_2 PP' \psi_2' + \ldots + \psi_{s-1} PP' \psi_{s-1}' =$$

$$\sum_{j=1}^{m} (p_j p_j' + \psi_1 p_j p_j' \psi_1' + \psi_2 p_j p_j' \psi_2' + \ldots + \psi_{s-1} p_j p_j' \psi_{s-1}')$$

where $\Omega = E(\varepsilon_t \varepsilon_t')$, p_j is the *j*th column of P. The orthogonalized response at lag *p* is $\psi_p P$ and the raw *i* column *j* element of $\psi_p P$ is the impact of a one standard deviation orthogonalized shock to $y_{j,t}$ on $y_{i,t+p}$ holding each of the other shock at the all dates constant.

As a final step, Granger causality test is implemented to explore unidirectional or bidirectional causal relationship between oil prices and sector returns. A variable x Granger causes another variable y if past values of x help forecast the current value of y given all other information. Granger causality requires estimating the following two equations:

$$x_t = \alpha + \sum_{i=1}^{m} \beta_i x_{t-i} + \sum_{j=1}^{n} \gamma_j y_{t-j} + \varepsilon_t$$

$$y_t = \theta + \sum_{i=1}^{k} \vartheta_i y_{t-i} + \sum_{j=1}^{l} \phi_j x_{t-j} + \eta_t$$

3. Empirical results

Table 1 represents the descriptive statistics of the monthly data. The mean returns for all series are positive ranging from a minimum of 0.00013 (eletricity sub-index, XELKT) to a maximum of 0.017 (main metal industry sub-index, XMANA). For all indices and Brent oil, the standard deviation is noticeably greater than absolute mean values, suggesting that the means are not significantly different from zero. The sample standard deviations show that food and beverages sub-index (XGIDA) is the least volatile with a standard deviation of 0.10 while the financial leasing sub-index (XFINK) can be considered as the most volatile with a standard deviation 0.15. Based on the skewness statistics, all series, except the tourism sub-index (XTRZM), are skewed to the left and the value of kurtosis is greater than 3 for all the series indicating a leptokurtotic distribution which means that return series have heavy tails relative to the normal distribution. Besides, the Jarque-Bera statistics suggest rejection of the null hypothesis of normality at the 1% level of significance.

Table 1. *Descriptive statistics*

	DBRENT	*DXBANK*	*DXELKT*	*DXFINK*	*DXGIDA*	*DXGMYO*	*DXHOLD*
Mean	0.613556	0.014596	0.000138	0.011972	0.016445	0.007394	0.009639
Std. Dev.	6.193187	0.145126	0.130310	0.155715	0.101911	0.142266	0.140740
Skewness	-1.249097	-0.466637	-0.551367	-0.663354	-0.610175	-0.838999	-0.879631
Kurtosis	5.894974	4.052321	4.834260	6.400262	4.233760	6.043951	5.554639
J-B.	82.24788	11.12840	25.76550	74.93587	16.93922	67.95739	54.11916
Probability	0.000000	0.003833	0.000003	0.000000	0.000210	0.000000	0.000000
	DXKAGT	*DXKMYA*	*DXMANA*	*DXMESY*	*DXTCRT*	*DXTEKS*	*DXTRZM*
Mean	0.011034	0.013006	0.017150	0.014046	0.016832	0.006844	0.003010
Std. Dev.	0.134210	0.122789	0.138933	0.133903	0.111813	0.117556	0.153529
Skewness	-0.664320	-0.762312	-0.789661	-1.023173	-1.575774	-1.103797	0.033391
Kurtosis	4.273274	5.823624	4.598519	6.418437	9.213353	6.017572	5.735154
J-B.	19.04913	57.92249	28.40355	89.28701	273.0263	78.63307	42.10608
Probability	0.000073	0.000000	0.000001	0.000000	0.000000	0.000000	0.000000
	DXU100	*DXUHIZ*	*DXULAS*	*DXUSIN*	*DXUTEK*		
Mean	0.013293	0.013102	0.015036	0.014415	0.008891		
Std. Dev.	0.124632	0.103578	0.144234	0.113655	0.131659		
Skewness	-0.813821	-1.193970	-0.843079	-0.999111	-0.675797		
Kurtosis	4.929787	5.475614	5.252539	5.897288	3.813306		
J-B.	35.84981	66.54896	44.53347	69.67783	13.99654		
Probability	0.000000	0.000000	0.000000	0.000000	0.000913		

We conduct the augmented Dickey-Fuller (ADF) test to examine the stationarity of the series. Table 2 shows that all the variables are non-stationary in levels and stationary in their first differences at the 1% significance level. We also crosscheck our results by the PP (Philips-Perron, 1988) and KPSS (Kwiatkowski, Philips, Schmidt, Shin, 1992) for all series. For the sake of brevity we don't recite the results but they are available upon request.

In this study cointegration analysis investigates whether there exists a common stochastic trend between oil prices and sector indices. If the variables are cointegrated they converge to equilibrium through time. Table 3 represents Johansen cointegration test results with the null hypothesis of no cointegration.

Table 2. *ADF test results*

Variable	*Levels*	*p-value*	*First Diff.*	*p-value*
BRENT	-1,956	0.3057	-8,253	0.0000
XBANK	-2,113	0.2400	-1,031	0.0000
XELKT	-2,114	0.2396	-8,942	0.0000
XFINK	-2,202	0.2069	-8,803	0.0000
XGIDA	-0,408	0.9026	-1,129	0.0000
XGMYO	-2,266	0.1849	-9,248	0.0000
XHOLD	-2,169	0.2189	-10,000	0.0000
XKAGT	-2,325	0.1663	-9,810	0.0000
XKMYA	-1,363	0.5975	-1,000	0.0000
XMANA	-2,154	0.2246	-8,454	0.0000
XMESY	0.909	0.9636	-9,017	0.0000
XTCRT	-0,250	0.9271	-9,466	0.0000
XTEKS	-1,182	0.6799	-8,485	0.0000
XTRZM	-1,806	0.3760	-9,797	0.0000
XU100	-1,720	0.4181	-1,015	0.0000
XUHIZ	-1,343	0.6070	-1,053	0.0000
XULAS	-0,006	0.9551	-7,141	0.0000
XUSIN	-1,179	0.6811	-9,652	0.0000
XUTEK	-0,697	0.8418	-9,487	0.0000

Table 3. *Johansen cointegration test results*

Indices	**Test Statistics**	**Probability**	**Results**
XBANK	14,56	0.0449	1 cointegration equation
XELKT	8,13	0.3653	No cointegration equation
XFINK	11,89	0.1150	No cointegration equation
XGIDA	16,97	0.0182	1 cointegration equation
XGMYO	10,52	0.1802	No cointegration equation
XHOLD	10,02	0.2109	No cointegration equation
XKAGT	10,25	0.1963	No cointegration equation
XKMYA	16,07	0.0256	1 cointegration equation
XMANA	8,00	0.3789	No cointegration equation
XMESY	10,78	0.1654	No cointegration equation
XTCRT	12,17	0.1043	No cointegration equation

Indices	Test Statistics	Probability	Results
XTEKS	12,56	0.0913	No cointegration equation
XTRZM	6,23	0.5841	No cointegration equation
XU100	14,95	0.0388	1 cointegration equation
XUHIZ	16,34	0.0231	1 cointegration equation
XULAS	8,89	0.2957	No cointegration equation
XUSIN	15,79	0.0285	1 cointegration equation
XUTEK	10,05	0.2085	No cointegration equation

As can be seen from the above table there are at least one cointegrating relationship between oil prices and six of the sub-sector indices. These indices are Banks (XBANK), Food and Beverage (XGIDA), Chemical, Petroleum, Plastic (XKMYA), BIST 100, Services (XUHIZ) and Industrials (XUSIN) indices. Thus we employ vector error correction methodology to these series in order to explore the long run dynamic relationships with oil prices. For the remaining indices, vector autoregressive model is applied to capture the dynamics of the short-run relationships.

Before implementing VAR and VEC models, we need to determine the optimal lag length using Akaike Information Criteria (AIC), Schwart Criterion (SC) and Final Prediction Error (FPE). XBANK and XKMYA are found to have optimal lag length orders of 3 and 2 respectively, while all the other series are tested with 1 lag.

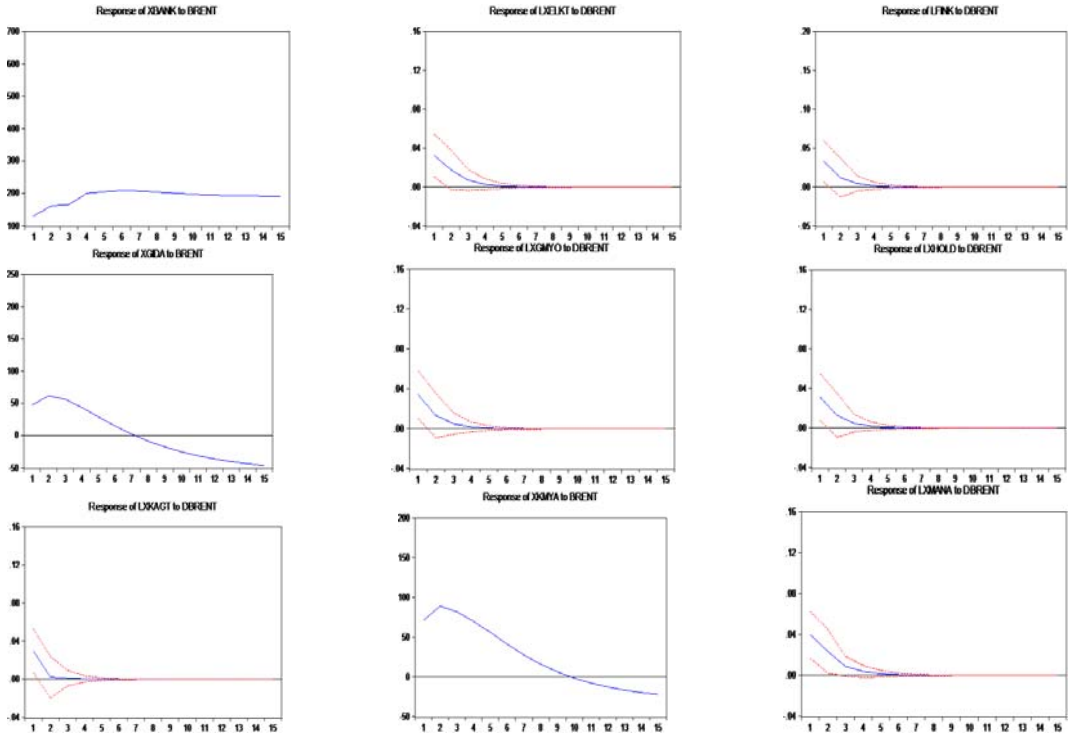
In this empirical work, the direct interest is the impulse response functions (IRFs) and variance decompositions (VDCs) generated from the models. Thus the coefficient estimates except for error correction terms are not included in the paper but can be available upon request.

Figure 1 represents the impulse response functions showing the impact of oil price shocks on sub-sector indices, revealing that all 18 industries give positive responses to oil price shocks contemporaneously, however, the reactions are at varying magnitudes. The shocks die away in about six months for the electricity (XELKT), the real-estate investment trusts (XGMYO), holding (XHOLD) and basic metal sub-indices (XMANA) and in about four months for the metal products, machinery (XMESY), the wholesale and retail trade (XTCRT), the tourism (XTRZM), the textile and leather (XTEKS), the leasing and factoring (XFINK) and the technology (XUTEK) sub-sector indices. We find that the effect of oil price shocks on the transportation (XULAS) and the wood, paper and printing (XKAGT) sub-indices fade away only in two months.

As previously mentioned, the cointegrating relationship between oil prices and the banking sub-index requires a VEC model to capture the dynamics of the long-run relationship. A shock to oil prices leads to an increase in the banking sector index

(XBANK) up to four months and then the effect stabilizes over the long-run. One standard deviation shock in oil prices has an immediate positive effect on the food and beverage sub-index (XGIDA), however the index gives a negative response after the eighth month. A shock to the innovations in oil prices leads to an immediate positive response both in the chemical, petroleum, plastic (XKMYA) and the services (XUHIZ) sub-indices, however after a lag of ten and twelve months respectively, the oil shock causes a negative response which stabilizes thereafter. A shock in oil prices causes a positive impact on the BIST 100 index firms which becomes steady in about a year. The response of the industrials index (XUSIN) to oil price shocks is positive and the influence sharply fades away in six months.

The results of the generalized impulse response functions can be attributed to demand side shocks in oil prices, where oil price increases are taken as signals of output growth in the global economy. Turkish economy has performed at record high growth rates since 2003 and positive effects of this growth may seem to offset the negative effects of oil price shocks. Additionally in recent years, capital inflows to Turkey have significantly increased as a consequence of sustained political stability, structural reforms, sound monetary and fiscal policies.



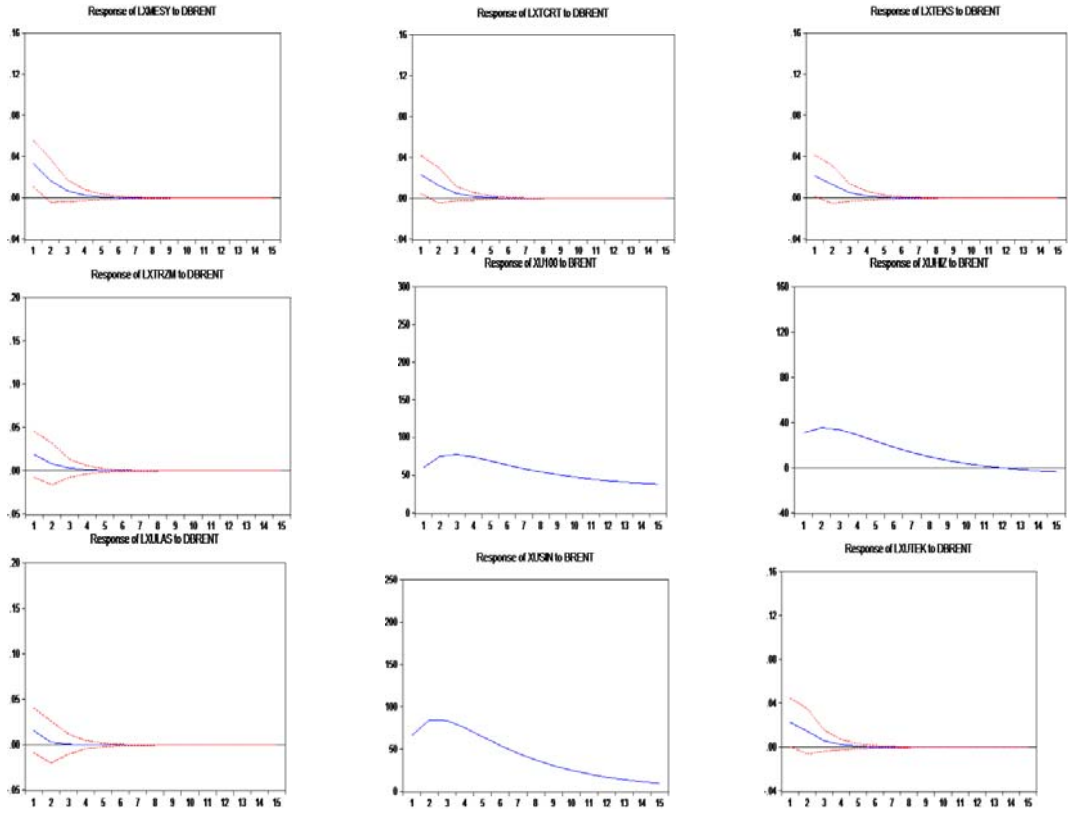
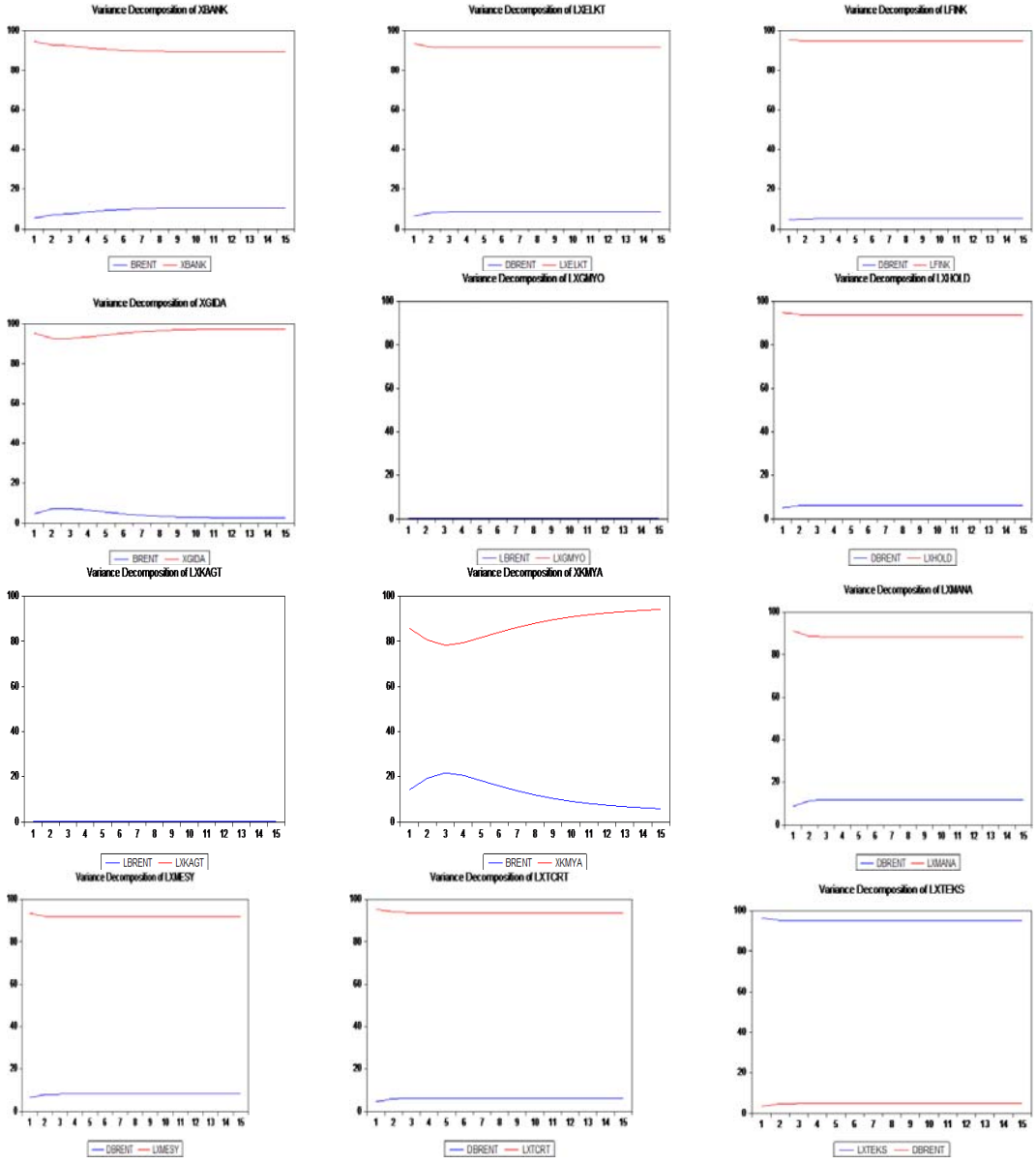


Figure 1. *Impulse response functions*

In Figure 2, the VDC analysis depicts that an oil price shock is not a major source of volatility for the sub-sector indices, most forecast error variance is due to each variables' own shock. The contribution of oil price shocks to the variance decompositions ranges from 1% for the transportation (XULAS) index to 21% for the chemical, petroleum, plastic (XKMYA) sub-index. The forecast error variances of the industrials (XUSIN), banking (XBANK), BIST 100 (XU100) are the highest following the chemical, petroleum, plastic (XKMYA) sub-index.


Variance Decomposition of XBANK
BRENT XBANK
Variance Decomposition of LXELKT
DBRENT LXELKT
Variance Decomposition of LFINK
DBRENT LFINK
Variance Decomposition of XGIDA
BRENT XGIDA
Variance Decomposition of LXGMYO
LBRENT LXGMYO
Variance Decomposition of LXHOLD
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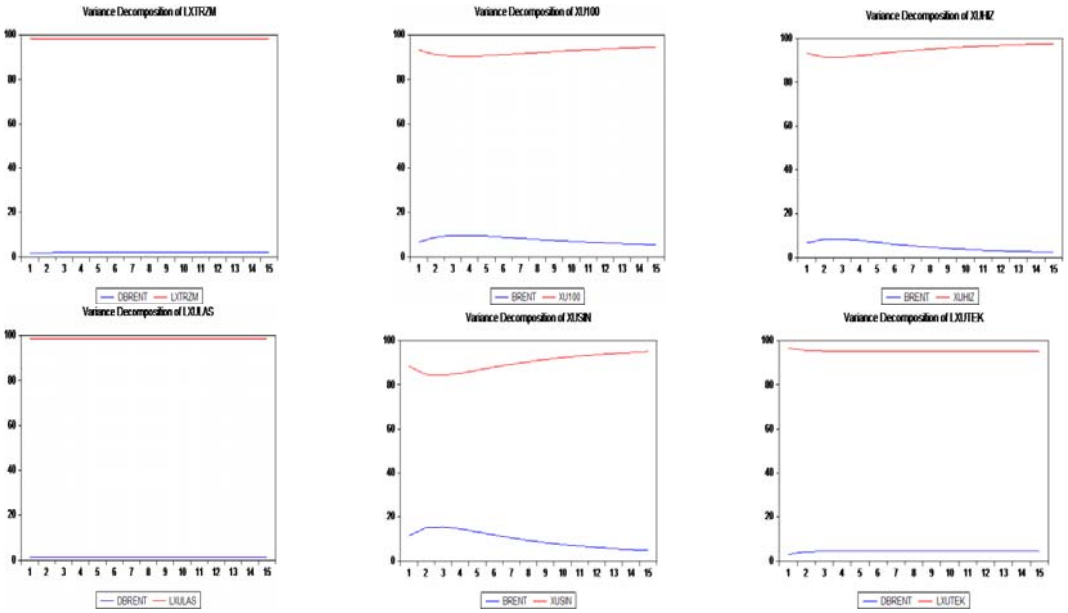

Figure 2. *Forecast error variance decompositions*

In the context of efficient markets, oil price predictability may seem to have irrational outcomings; however, in the finance literature, researchers as Hong and Stein (1996), Schiller (2000), Hong et al. (2007) vindicate oil effect by the assumptions of the underreaction hypothesis which states that investors are "boundedly rational", they have limited understanding of the dynamics affecting asset prices, so they procrastinate immediate action to instantaneous flow of public information. In line with this branch of literature, Driesprong et al. (2008) evidence that industries where oil prices exhibit a "dominant first-order impact" are less predictable compared to the industries where oil has a "second-order impact". They suggest the latter having a more "pronounced" oil effect. Our findings for the chemcial, petroleum, plastic (XKMYA) index are contrary to those of Driesprong et al. (2008), Fan and Jahan-Parvar (2012), Hong and Stein (1996), Hong et al. (2007) who adduce that sectors which are highly "sensitive" to oil prices incorporate oil price information instantaneously into stock prices; thus they are not oil predictable. Industries that are not in direct relation with the energy sector are found to be oil predictable with the justification of the underreaction hypothesis in their studies. The transportation sector (XULAS) is not oil predictable supporting the literature above.

In order to explore the speed of adjustment from short run to long run dynamics, Table 4 represents the error correction terms.

Table 4. *Estimated error correction terms*

Dependent variables	ECT_{t-1}	p-value
XBANK	1.100	0.7127
XGIDA	-2.291	0.1201
XKMYA	-3.067*	0.0462
XU100	-0,679	0.6119
XUHIZ	-0,873	0.2453
XUSIN	0.051	0.2061

Table 4 provides an empirical evidence of a short run adjustment to long term dynamics in the relationship between Chemical, Petroleum, Plastic sub-index (XKMYA) and Brent oil prices. The statistically significant and negative error correction term above (-3.067) shows the adjustment speed to the long run equilibrium.

Tables 5 and 6 represents Block Exogeneity Wald test and standard Granger causality tests, respectively. Block Exogeneity Wald test is applied for the variables which have a cointegrating relationship. Standard Granger causality test is conducted for the variables in the VAR system. Block Exogeneity Wald test is an F-test which evaluates the impact of the lags of independent variables on dependent variables and indicates the short term causality.

Table 5. *VECM Granger causality/Block exogeneity Wald test*

Dependent Variable	χ^2	p-value	Results
XBANK	0.666	0.881	BRENT does not Granger cause to XBANK
XGIDA	3.807	0.051	BRENT does not Granger cause to XGIDA
XKMYA	8.845	0.012	BRENT does Granger cause to XKMYA
XU100	1.348	0.245	BRENT does not Granger cause to XU100
XUHIZ	1.661	0.197	BRENT does not Granger cause to XUHIZ
XUSIN	3.667	0.055	BRENT does not Granger cause to XUSIN

According to the results based on the Table 5 above, we reject the null hypothesis that Brent oil price does not Granger cause to Chemical, Petroleum and Plastic sub-index (XKMYA). Hence, Brent oil prices can help predict the current value of the index, which is also consistent with the significant error correction term. No causal relation is found to exist between Brent oil prices and other remaining cointegrated sub-indices. Since Granger (or short term) causality can be found through the vector error-correction model derived from the long-term cointegrating vectors. Table 6 provides an evidence of significant short run uni-directional causal link from oil prices to the basic metal sub-index (XMANA) only.

Table 6. *Standard Granger causality*

Null Hypothesis	*F-statistics*	*p-value*	*Decision*
BRENT does not Granger cause to XELKT	1.322	0.270	Accept
BRENT does not Granger cause to XFINK	0.780	0.460	Accept
BRENT does not Granger cause to XGMYO	1.055	0.351	Accept
BRENT does not Granger cause to XHOLD	2.248	0.109	Accept
BRENT does not Granger cause to XKAGT	1.257	0.287	Accept
BRENT does not Granger cause to XMANA	3.195	0.044	Reject
BRENT does not Granger cause to XMESY	2.239	0.110	Accept
BRENT does not Granger cause to XTCRT	2.588	0.079	Accept
BRENT does not Granger cause to XTEKS	1.094	0.337	Accept
BRENT does not Granger cause to XTRZM	0.332	0.717	Accept
BRENT does not Granger cause to XULAS	0.554	0.575	Accept
BRENT does not Granger cause to XUTEK	1.127	0.327	Accept

Conclusions

In this study we analyzed both short-term and long-term relations between oil prices and 18 selected sub-sector indices from Borsa Istanbul for the period between January 2002 and April 2013. We have found cointegrating relationship between oil prices and banks (XBANK), food and beverage (XGIDA), chemical, petroleum, plastic (XKMYA), BIST 100, services (XUHIZ) and industrials (XUSIN) indices. Vector error correction methodology is employed to these indices in order to explore the long run dynamic relationships with oil prices. In the context of vector autogressive models, we apply generalized impulse responses and forecast error variance decomposition analysis to measure the sensitivity of sectoral returns to the oil price shocks. The results of the analyses reveal that sector indices respond positively to oil price shocks. We document mixed results compared to previous literature. We provide an empirical evidence of oil price predictability for the XKMYA sub-index, where oil prices have a first-order impact. However, the transportation sector (XULAS) is not oil predictable.

The results of the multivariate GARCH model suggest uni-directional volatility spillover from oil market to four of the sectors. We observe that Turkish firms have an oil risk exposure and they should implement more effective hedging strategies in this regard. Our findings are indicative for policy makers and portfolio managers.

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Aspects on the perception of young people regarding balneotherapy tourism in Romania

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Abstract. *The delimitation of perceptions regarding balneotherapy destinations is a defining process for shaping their positioning in consumers' minds. Therefore, creating how balneotherapy tourism products specific activities are perceived by consumers and the relationship that they have reported to the sensations that assemble the touristic experience is essential in creating a tourism image. In this sense, a quantitative marketing research was conducted on a sample of 573 young people undergoing university studies in order to know their perception regarding balneotherapy resorts in Romania, analyzing the importance and particularities of each sensation in relation to balneotherapy resorts felt by respondents that differentiate the balneotherapy experience from other touristic experiences.*

Keywords: perceptions; sensory marketing in tourism; balneotherapy destination.

JEL Classification: M31.
REL Classification: 14G.

Introduction

As information technology develops, altogether with man's isolation from nature, the importance of tourism products focusing on health, meeting global, aggregate needs by extending the concept of health to achieving wellbeing is more obvious in terms of the *body-mind-spirit* relationship (adaptation according to Dunn, 1959, quoted in Smith, Puczko, 2009). Wellbeing, superior to the state of happiness, means "to have a clear direction to follow in life, a sense of belonging, a coherent and positive vision on life and a sense of affiliation" (Hamilton – Wellness Manifesto, 2008, cited in Smith, Puczko, 2009), and is increasingly common in the literature, also integrating other needs found on different levels on Maslow's pyramid. Given the complexity of health tourism with its types, it can be said that it has become a type of tourism of "senses".

As the new activities by which "achieving wellbeing" materializes represent "drivers" of tourism products (in the case of Romania, balneotherapy activities represent their essence) that are based on new sensations for consumers, in order to effectively plan destinations in terms of marketing, more detailed researches are required firstly on all the senses by which it is perceived by potential tourists.

Conceptual framework

Achieving wellbeing involves "what is good for a person, but also the extent to which a person's life goes well" (Stanford Encyclopedia of Philosophy, 2007), requiring "the solving" of a unique complex of physical, mental and spiritual conditions for each consumer. Thus, the need for tourism service customization occurs at a medical level by establishing a diagnosis and a specific treatment regimen that meets the (health) need of consumers, but also at a tourist level by choosing those services that match the preferences and desires of consumers and that distinguish between consumption and experience, unlike ordinary consumption (with no obligation to be "adapted" or "customized"). Touristic experience causes a high degree of "closeness" to the consumer, its components being best "absorbed" by the consumer by transforming them into sensations, and then into well-defined consumer perceptions, and contributes to the expected or desired state of spirit, emphasizing, in this way, the emotional side of consumption.

Sensory marketing focuses on the impact of the five senses on consumer experience (Giboreau, Body, 2007, p. 8). Regardless of the objectives (e.g., targeting new markets by knowing the sensations that "meet" certain categories of consumers; development of new products by exploring and capitalizing the stimuli that imprint consumer with a sensation or coherent complex of

desired/expected sensations; repositioning existing products by emphasizing, sharing or updating those sensations which are found to be in accordance with the needs of consumers etc.), the starting point in sensory marketing, in the context of touristic experience, is the prior analysis of sensory properties (regarding tourists' contact with the destination by specifying its resources, but also tourism products and/or services) to group or regroup them in a structure consistent with the levels of the product that adds value.

Therefore, given the high degree of sophistication of consumer needs, tourism products should contain a significant number of "sensory contact points" with the consumer, involving all the senses for a complex touristic experience. For example, to create a complex visual experience, marketers should consider and analyze permanently the color palette used, the brightness, transparency, reflections, motives, area, volume and textures used; also controlling each dimension should be calibrated depending on the product concept or integrated product, based on the consumer's needs and/or desires and, possibly, on competing products. Regarding hearing, the analysis should focus on intensity, pitch, timbre and vibration of sound to identify new opportunities to improve the product and at the same time obtain a consistent experience (by harmonizing sensations). Tourism products can target consumers through the sense of touch, creating sensations related to touch, motion, thermal condition or pain thresholds, which are both important for treatment services, and for wellness and relaxation ones. Smell, characterized by quality, intensity, emotional valence and duration also needs to be studied, explained, exploited and refined with taste (through its four facets: bitter, sour, salty and sweet taste).The harmonization of the sensations belonging to the five senses consists of expressing and explaining the idea of "health by all means"(at destination level), which acts as an umbrella conceptor interpretation filter to create perception, since it includes both value judgments, and evocative and symbolic functions (Giboreau, Body, 2007, p. 63). Since satisfaction – an element highly studied by marketing specialists – is a subjective phenomenon, although it is subjected to an objective determinism (adaptation according to Pop et al., 2008, p. 77), the more emphasis is placed on the influence of the senses, by the approach that transcends the classical framework of the five senses, and more, by allowing the creation of some tourism products starting right from the "activities [...] encompassed within the philosophy of the six senses"–*six senses* (Stăncioiu et al., 2013, p. 130), by this ensuring a strong emotional bond with the consumer.

While sensations can be described using language –their "objective" description "framework", perceptions are a product of consumer interpretation based on personal, marketing (related to the product), situational factors or related to previous experiences (Giboreau, Body, 2007, p. 61), which have a strong

subjective character, and, therefore, are more difficult to quantify. Thus, unique relationships can be created that can render different perceptions of the same sensations. The importance of studying the relationship between sensation and perception is especially important for complex balneotherapy tourism products, such as those in Romania, whose symbolic universe is extremely comprehensive, their complexity making it difficult to achieve the multisensory balance, a task essentially left in the area of expertise of marketing, namely the creation of new balneotherapy products.

Methodological framework

Starting from the importance of engaging the five senses in the decision to purchase a tourism product (especially, balneotherapy products) and then in consumer satisfaction, it was considered necessary to conduct a quantitative marketing research with the aim of knowing youth perception on balneotherapy resorts. The research objectives refer to the importance and particularities of each sense in relation to balneotherapy resorts felt by respondents contributing to the mental delineation of the balneotherapy experience from touristic experiences based on other types of tourism.

The research was conducted between November 2012 – April 2013, on a sample of 573 persons undergoing university studies(1), being composed of: people aged 18-24 (90.9%), people aged 25-39 years (8.2%), and people aged 40-50 (0.9%). Of the respondents, 29.4% are males, and 70.6% are females. In terms of geographical distribution, 42.2% of respondents are residents of Bucharest City, 32.8% come from Muntenia, 10.8% – Moldova, 2.4% – Dobrogea, 1.2% – Transylvania and 0.5% – Banat-Crişana. Most respondents have incomes of less than 1,000 lei (49.3%), 39.6% of them having incomes between 1,000-2,000 lei, 5.3% - 2000-3000 lei and 5.8% - above 3,000 lei.

Research results

To analyze the main sensory properties of balneotherapy destinations it is necessary to know the reasons for visiting them, as some tourism services that may benefit potential consumers are addressed to certain market segments (e.g., recovery, treatment, prevention, relaxation services etc.), whose generic features aim specific sensations that underlie the formation of certain perceptions (e.g., the sun bath, a treatment service for allergic asthma or tracheo-bronchitis is a factor stimulating the sense of touch etc.). Most respondents who had visited a balneotherapy resort (380 of the respondents) – 56% – aimed to relax, followed by rest (13%) and prevent (12%) – Figure 1.

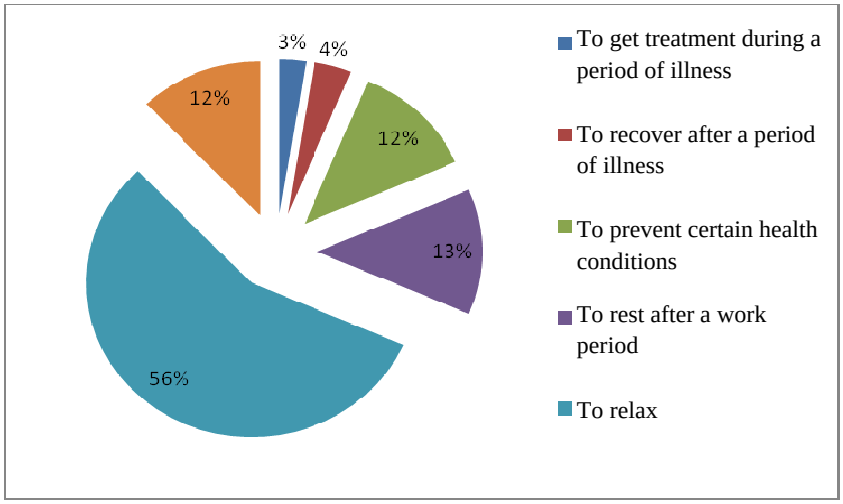

Figure 1. *Reasons for visiting balneotherapy resorts*

In fact, after visiting as many new places as possible (37% of respondents), the main purpose when choosing a tourism destination is represented by rest and recreation (35.4%), and then by relaxation (12.2%) – Table 1, all being the main reasons why young people visited so far balneotherapy resorts in Romania, which emphasizes the importance of balneotherapy tourism products.

Table 1. *The main purpose when choosing a tourism destination*

% of column total

Visiting as many new places as possible	37.8
Rest and recreation	35.4
Relaxation	12.2
Entertainment	6.7
Knowledge	6.0
Pursuit of extreme sports activities	1.5
Other reason	0.4

Source: statistical survey conducted by the authors.

Since all balneotherapy resorts in Romania allow spending the vacations in all seasons, most of them being generally permanent resorts, the vacation period is important to determine the seasonal factors that make and differentiate the touristic experience. Sensory marketing specialists are particularly interested in the specificity of natural factors in relation to the change of seasons (e.g., air temperature, the colors of the natural environment etc.), and then on their influence degree on the main quantitative and qualitative indicators (e.g., the

number of tourists visiting a particular destination during the period studied, the average length of stay, the degree of recovery etc.). The fact that 91% of respondents take time off between July and September (Figure 2) must provide those interested in destination sensory marketing with the necessary basis to perform a "sensory audit" of the destination for this period, determining and capitalizing the sensory stimuli with which potential consumers can get in touch and how they can help to meet their needs in terms of travel motivation. However, to capitalize the tourism potential of balneotherapy resorts it is necessary to emphasize the main seasonal sensory stimuli that can act on potential consumers in other periods, too (October to December, January to March – 1%). This action is the basis for building competitive advantage that resorts may hold in relation to other tourism destinations, whose seasonal character does not allow spending vacations in this period.

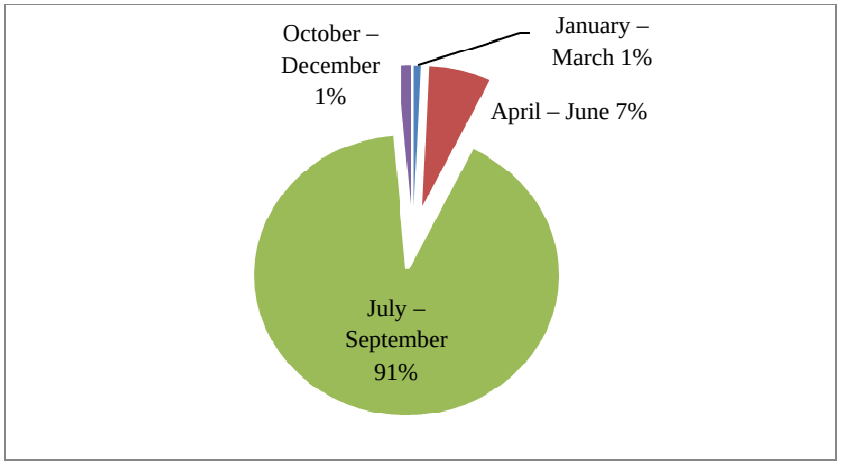

Figure 2. *Period of vacations*

To complement the "universe of the senses" from the perspective of touristic experiences as complex as possible (multiple types of tourism), it was considered important to determine the main types of tourism that can be practiced alongside balneotherapy tourism from the perspective of the respondents. Mountain tourism (36%) and cultural tourism (24%) followed by ecotourism (13%) were the main types of tourism associated with balneotherapy tourism, the sensory stimuli to which consumers may be subjected when practicing activities related to associated types of tourism "enriching" in this way the sensory experience and bringing added value to the touristic experience with effects on obtaining satisfaction.

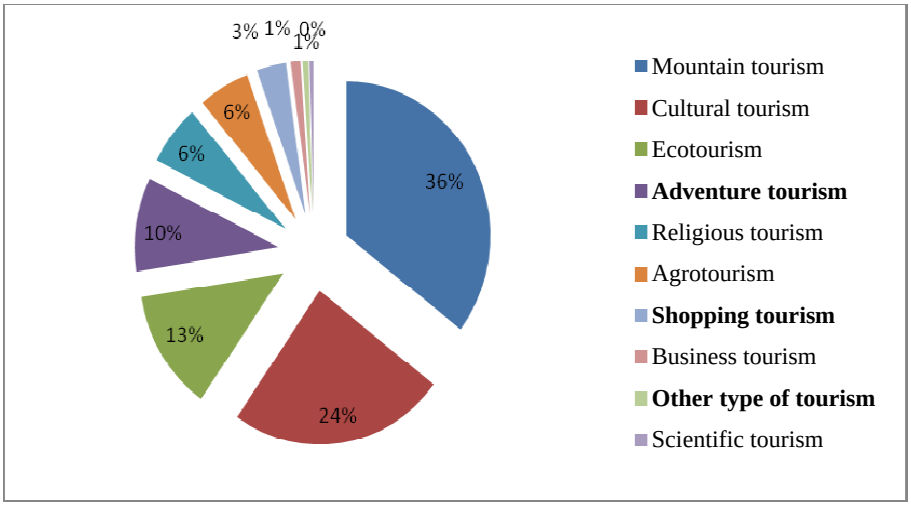

Figure 3. *The most appropriate type of tourism to be practiced alongside balneotherapy tourism*

The contribution of the types of tourism related to balneotherapy tourism is important considering the "universe of sensations" making up a balneotherapy touristic experience; it can be supplemented with auxiliary activities that stimulate the other senses than those perceived by consumers in the balneotherapy experience, or that emphasize the perception of senses also found in the sensory balneotherapy experience. Mountain tourism (Figure 4) is a type of tourism that involves, from the respondents' view, all the senses (64%) and is considered, at the same time, to be most suitable for balneotherapy tourism. In this case, the introduction of mountain tourism specific activities or merging them with balneotherapy activities can be a competitive advantage in sensory marketing strategy for balneotherapy tourism, complementing the balneotherapy touristic experience by catalyzing the perception of senses stimulated by balneotherapy experiences or by "enriching" and diversifying them with mountain activities (e.g., practicing sport activities at Băile Herculane to supplement balneotherapy treatments). Seaside tourism (44.5%) and adventure tourism (35.3%), in the view of respondents, are largely types of tourism involving all the senses, before balneotherapy tourism. Activities that they involve can be used in a sensory marketing strategy to create developed balneotherapy products (e.g., for a better "coverage" of the senses, practicing beauty/wellness services in seaside resorts etc.).

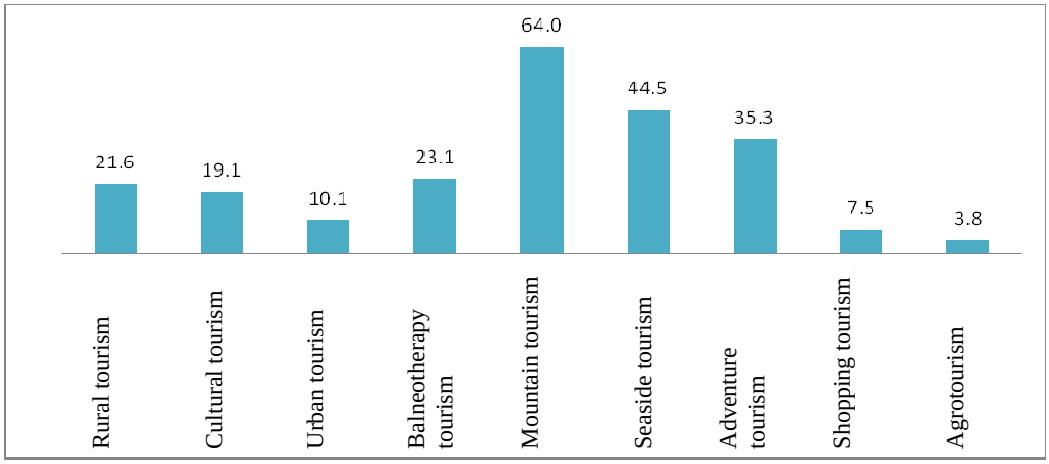

Figure 4. *The type of tourism which, from the respondents' view, involves the five senses*

Another possibility for practicing balneotherapy tourism can be represented by the "alternative" situation to spend time in another type of destination (rural, mountain, seaside, urban etc.). Respondents consider balneotherapy tourism a choice in relation to a rural destination (61.3% would choose a balneotherapy destination compared to a rural destination). However, mountain and seaside destinations (considered by respondents as those that best involve all five senses) would be selected by respondents if they would have to choose between each of them and a balneotherapy resort. Hence, the need for a sensory profile of tourism resorts, balneotherapy, mountain and seaside alike, for the creation of a well-defined image, of the possibilities related to experiences that generate desired/expected sensations.

Table 2. The possibility to choose a balneotherapy destination compared to another type of tourism destination

– % –

Balneotherapy destination	61.3	38.7	**Rural destination**
Balneotherapy destination	4.4	95.6	**Seaside destination**
Balneotherapy destination	4.4	95.6	**Mountain destination**
Balneotherapy destination	44	56	**Urban destination**

In order to shape, from the perspective of the respondents, a balneotherapy identity based on the senses, it was considered necessary to emphasize the differentiation of balneotherapy resorts; therefore, the main differentiating factor of balneotherapy resorts is that of taste in terms of foods and mineral waters (achieving a score of 5.01 on a semantic differential type scale with six gradations) – Figure 5, the smell also being asensory element of differentiation of balneotherapy resorts (4.26). In an analytical approach in which the knowledge of

sensory properties of products and services that are part of the tourism product prevails, the sensory marketing strategy can start from the two predominantly stimulated senses (taste and smell) to define the constituent elements of balneotherapy tourism products.

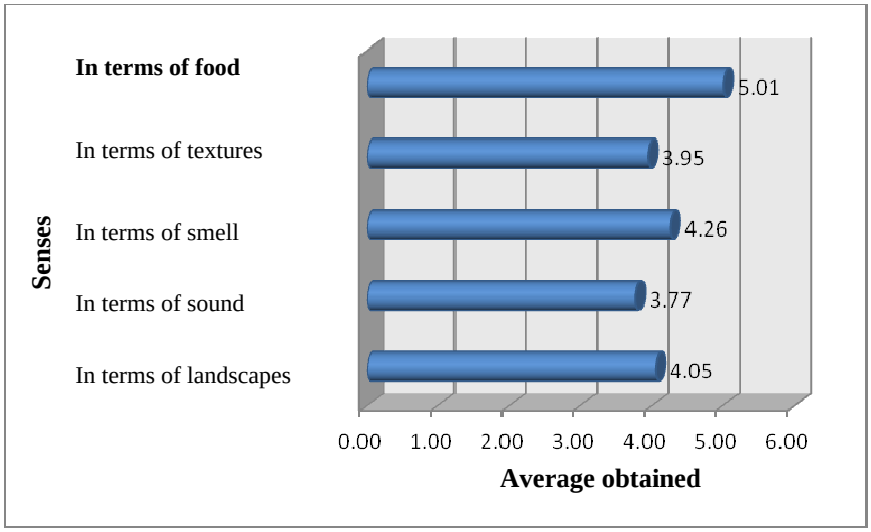

Figure 5. *Differentiation of the balneotherapy destination from other types of destinations in terms of the five senses*

In order to maximize the effects of stimuli, determining the sensory particularities of balneotherapy destinations must be related to how the different senses are "activated" or "used" to achieve wellbeing. Thus, sight (Figure 6) is considered by respondents as a sense contributing to the greatest extent to wellbeing during a vacation (with an average score of 5.41 on a semantic differential type scale with six gradations) followed by smell (4.86) and taste (4.77). The factors that stimulate the senses which differentiate balneotherapy resorts are mainly those who also "act" in order to achieve wellbeing, according to the respondents' answers.

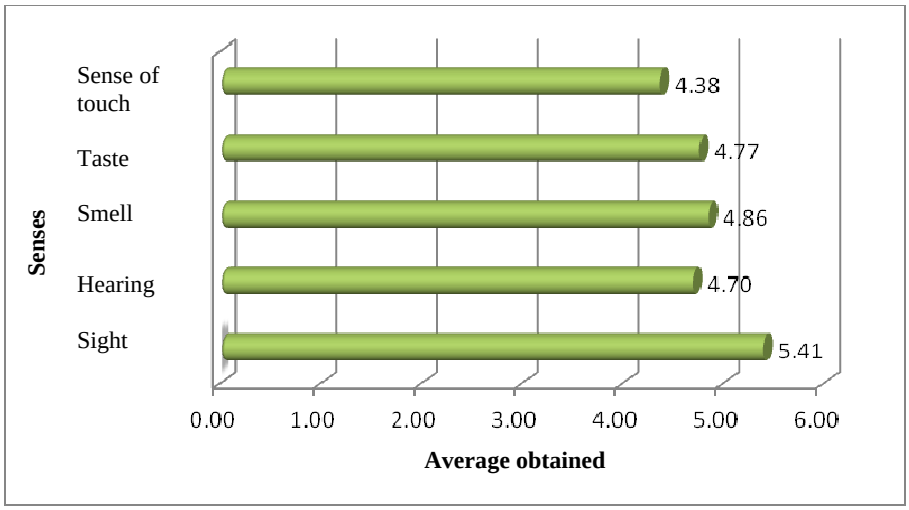

Figure 6. *The contribution of the five senses to the wellbeing that respondents want to achieve on vacations*

Seasons give specificity to sensations obtained especially based on activities in nature; therefore, perceiving balneotherapy vacations as suitable for a particular season automatically projects in a consumer's mind a particular set of activities and, therefore, a certain set of "expected" sensations. Summer (Figure7) is rated at 40.1% as the best season for a balneotherapy vacation, followed by autumn (20.6%); so it is necessary to determine the activities required/preferred (e.g., conducting field treatments), the set of sensations they involve (e.g., the sun's heat action during field treatments framed in stimulating the sense of touch), and the position of potential consumers to these sensations. It is also necessary to communicate the benefit of balneotherapy tourism that it can be practiced in all seasons, delimiting the sensory components associated with each of them (the average score for the statement that seasons count for balneotherapy tourism being 4.12 on a scale of 1 to 5).

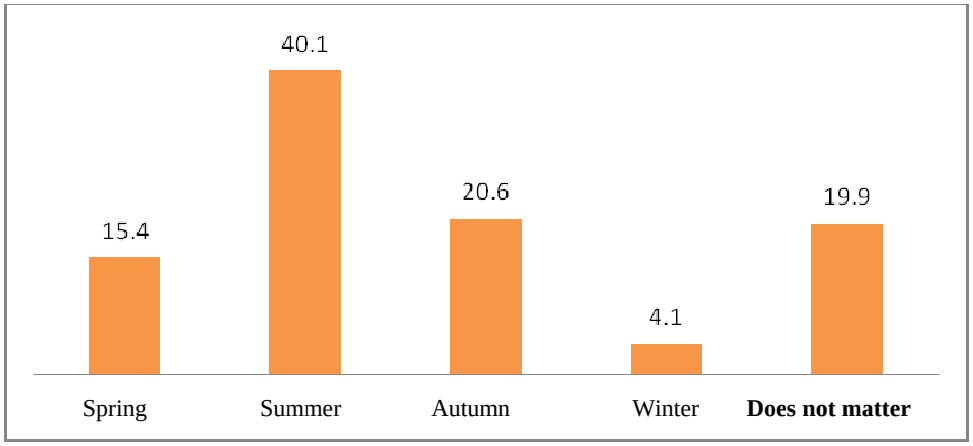

Figure 7. *Seasons associated with a vacation in balneotherapy destinations*

Taste (Figure 8), considered the sense through which balneotherapy tourism can be significantly differentiated, is analyzed in the research by the taste of food in balneotherapy resorts, predominantly dietary (37%). Since a significant proportion of respondents (19%) believe that food in resorts is normal – without differentiation elements based on the respondents' opinion that taste is a "trump card" in the sensory marketing strategy, it is necessary to shape a stronger taste identity both by analyzing sensory properties and by communicating them in terms of food, mineral or thermal waters or auxiliary elements used in treatments, such as bee products, phytotherapeutic products etc.

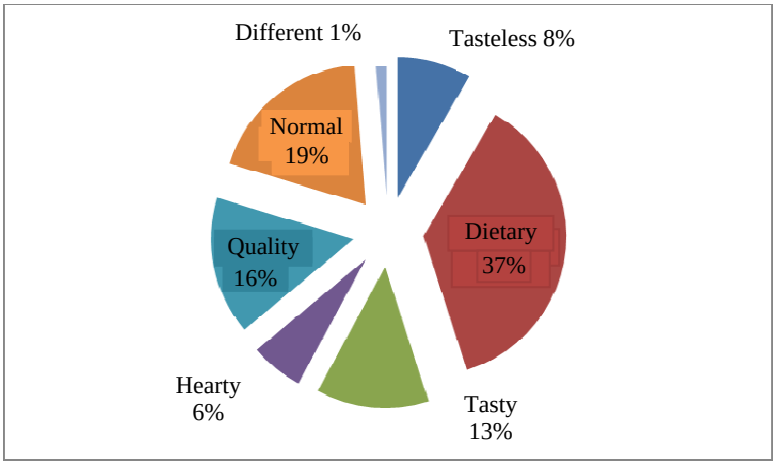

Figure 8. *Perception of the taste of food in balneotherapy resorts*

Regarding smell, another sense considered referential for balneotherapy resorts (Figure 9), it is considered by most respondents (40.4 %) as beneficial. However, 25.6% of respondents consider the smell of balneotherapy resorts as unpleasant. The two features are not mutually exclusive, as they are not the transcription of actual sensory properties, but, from the interpretation, they refer to the judgment of the sensation perceived through smell. Therefore, a smell with the same sensory properties (e.g., the salty air from salt mines etc.) can be considered following a judgment arising from multiple factors (prior experience, learning processes etc.) both, beneficial or bothersome. Therefore, the annihilation of the unpleasant smell perception from balneotherapy resorts may be the result of a learning process in health education, emphasizing the need for exposure to natural therapeutic factors.

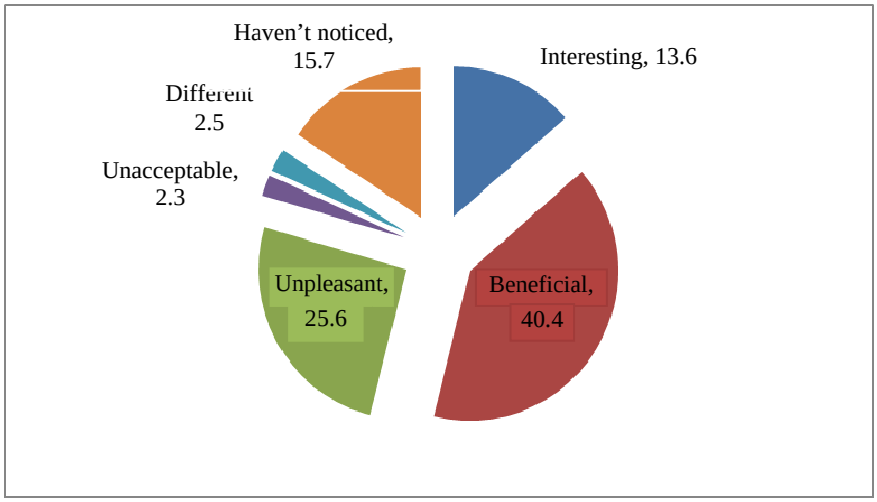

Figure 9. *The perception of air smell in balneotherapyresorts*

Regarding chromatics (as the stimulus of sight), the primary color perceived by 39% of respondents as being specific to balneotherapy resorts is gray (e.g., clay-colored) – Figure 10, followed by green – 24% (e.g., the color of forests) and white – 12% (e.g., water color). Colors listed as "identitary" for balneotherapy tourism generally should be analyzed by comparing the results with the colors of the identitary elements of balneotherapy resorts (e.g., mineral and thermal waters, the natural environment) to reveal the relationship between the respondents'/young people's perception and reality to establish sensory marketing goals.

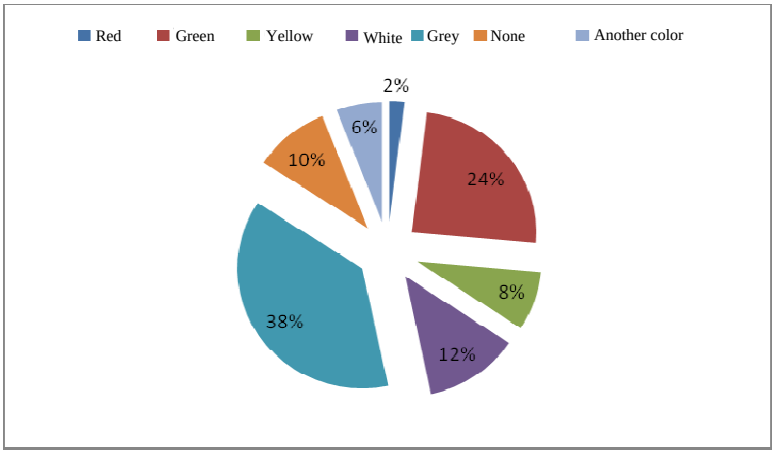

Figure 10. *Color association with balneotherapy resorts in Romania*

Exploiting sensory properties in an analytical approach of products considered unique (in terms of touristic experience) – with an emphasis on the senses considered striking in balneotherapy resorts – represents the main sensory vectors of destinations. In the case of balneotherapy resorts, products considered unique in the highest proportion (Figure 11) are mineral waters (with an average score of 4.35 on a scale of 1 to 5), followed by medicinal products (4.03). In their case, a thorough analysis must be made starting from the general sensory elements characteristic of all balneotherapy resorts which have mineral waters (to delimit an umbrella type sensory identity), continuing with the sensory particularities for each studied destinations (e.g., the smell of sulfurous waters in Băile Govora etc.).

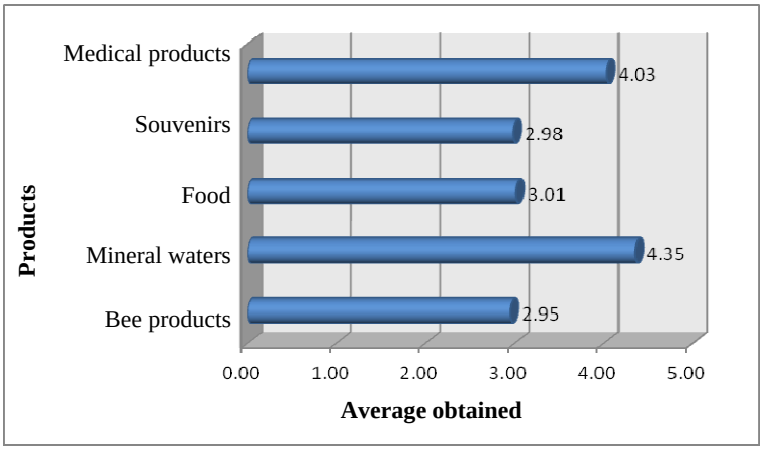

Figure 11. *The extent to which the products found in balneotherapy destinations are considered to be unique*

The image of balneotherapy destinations has a significant role in analyzing the perception of young people on balneotherapy resorts, both for actual consumers, but especially for potential consumers (who form a sensory reporting system based on the image of the destination, especially considering its affective component). Thus balneotherapy resorts are considered to a greater extent rather outdated than modern (with an average score of 2.35 on a semantic differential type scale with five gradations, where the gradation denoted by 1 represents the characteristic "outdated", and the gradation denoted by 5 represents the characteristic "modern") – Table 2. They are also considered to a greater extent passive than active (2.61), with a restricted offer rather than with a rich offer (2.63), boring rather than interesting (2.71), and cheap rather than expensive (2.91). The fact that, in the opinion of the consumer, balneotherapy resorts in Romania are not considered to have a rich offer can reduce the range of sensations felt, these being generated by activities considered boring, passive (in significant proportions). The image of balneotherapy destinations can be "updated" by the very sensation striggered by the activities that actually happen in balneotherapy resorts; thus relaunching of resorts can be achieved by creating new products whose benefits can be communicated/enhanced both by the cognitive communication of sensory properties (e.g., sense of touch produced by underwater shower leading to muscle relaxation etc.) and by their affective communication (e.g., the tranquility induced by the colors of the balneotherapy park in Băile Govora in spring).

Table 3. *Components of the image of balneotherapy resorts in Romania*

Outdated	*1*	**2.35**	*5*	Modern
Cheap	*1*	**2.91**	*5*	Expensive
Boring	*1*	**2.71**	*5*	Interesting
With a limited offer	*1*	**2.63**	*5*	With a rich offer
Passive	*1*	**2.61**	*5*	Active

Source: statistical survey conducted by the authors.

The analysis of the opinion on the main components making up the essence of the marketing concept is important to lay the groundwork from which marketers should start to establish the sensory marketing strategy and the product strategy, respectively. In terms of balneotherapy tourism market, young people consider expanding the products covered by this type of tourism that addresses multiple market segments (segmented by age, income and diseases); the claim that balneotherapy tourism is strictly dedicated to people with certain health conditions recorded a rate of 61.6% - disagreement and strongly disagreement, the claim that health tourism is dedicated to the elderly recorded a rate of 56.5% - disagreement

and strongly disagreement, while the claim that balneotherapy tourism is dedicated to people with limited financial resources rated 70.7% – disagreement and strongly disagreement (Table 3). Regarding balneotherapy products, characteristics related to the sophistication and quality degree are highlighted; the claim that balneotherapy destinations are limited to medical activities recorded a rate of 76.3% – indifferent, disagree and strongly disagreement, while the claim that the quality of products in balneotherapy destinations is questionable recorded a rate of 69.7% – indifferent, agree and strongly agree. The fact that 40.3% of respondents do not have a well-defined opinion on the price of balneotherapy products, considering an exclusive distribution strategy, indicates the need for a better shaping of the marketing mix strategy, given the distinction between buyer and consumer of balneotherapy tourism products (68.6 % of young people who visited balneotherapy resorts in Romania said that another family member had taken this decision).

Table 4. *Claims regarding balneotherapy tourism in Romania*

	Strongly disagree	Disagree	Indifferent	Agree	Strongly agree
Balneotherapy tourism is strictly dedicated to people with certain health conditions.	14.3	47.3	17.7	16.7	3.3
Balneotherapy tourism is dedicated to the elderly.	13.7	42.8	15.7	23.1	4.8
Balneotherapy tourism is dedicated to people with limited financial resources.	19.0	51.7	22.6	6.4	0.4
Balneotherapy resorts prices are relatively low.	2.7	23.2	40.3	31.0	2.9
Access to balneotherapy destinations is usually done by means of institutions providing treatment vouchers.	5.5	15.3	25.7	47.3	6.2
Balneotherapy resorts in Romania are inferior to balneotherapy resorts abroad.	2.0	4.6	16.7	41.1	35.6
Balneotherapy destinations are limited to medical activities.	6.7	39.8	29.8	16.6	4.0
The quality of products in balneotherapy destinations is questionable.	3.5	26.7	40.2	24.8	4.7

Source: statistical survey conducted by the authors.

However, the importance of considering young people, from a balneotherapy destination marketing perspective, as attractive market segment is enhanced by awareness of the relevance of balneotherapy tourism in the future (recording an average score of 3.54, compared to 2.65 on a scale of 1 to 5), requiring a deeper and, at the same time, constant concern for this “product-market matrix”.

Limits

The exploration of sensations, the formation of perceptions depending on it, can be most accurately depicted right before or after and/or during an event. Research on this subject before or after living an actual touristic experience involves significant limitations on the intervention of other factors blocking the storing of an emotion, or only permitting its recollection in similar circumstances. Therefore, it is necessary that the results of such a research are compared to the results of a research carried out "in situ", in which the impact of the stimuli to be present in a greater extent and to be rendered with greater accuracy by sensory memory – which intervenes automatically during short periods of time, the received stimuli being compared to those present in memory.

It is important to approach other market segments as well, regarded according to demographic, behavioral criteria and so on, to create the premises of a differentiated strategy that takes into account the needs, preferences and/or desires of each market segment considered.

Also, to get a broader image on the perception of balneotherapy resorts and to establish some sensory properties recognized as generally valid in order to lead to the drafting of a "sensory profile" of the balneotherapy destination, at the same time, it is necessary to conduct a qualitative research and/or marketing experiments, following that, depending on the result, the possible differentiation or uniqueness/brand elements of the destination to be detailed.

Conclusions

Having a role as important as that of the destination audit in marketing planning, in-depth analysis of sensations and perceptions of potential consumers (in the case of this study, young people) provides a similarly valuable "image" – of the reflection of consumer interaction regarding different types of resources, products and services from balneotherapy resorts. Based on the preponderance of the emotional factor in relation to the rational one in terms of tourism services, the way the potential consumer reacts to stimuli coming from the consumption of tourism services and how he perceives the "universe" of a destination becomes essential in creating the image of that destination.

Determining perceptions reveals the impact of the "hidden" dimensions of the tourism product on the consumer's psyche that differ in intensity (in terms of sensation), but especially in interpretation, by the possibility that a touristic experience is perceived completely differently by two categories of consumers (e.g., considering the smell of balneotherapy resorts as beneficial and/or unpleasant etc.).

The relative place occupied by each sense in shaping a global or sequential touristic experience, followed by judgment and interpretation, can provide the framework for creating a sensory marketing strategy enabling/facilitating the creation of tourism products and/or services to be based on sensations, likely to be "absorbed" by consumers; the way the sensations they involve are assimilated should be consistent with the idea of consumers on balneotherapy tourism (e.g., considering certain perceptions on balneotherapy tourism likely to "validate" a certain experience through generalization and categorization). Also, they should be encircled in the proper reference system (e.g., enhanced attention on the manifestation of certain preferred/experienced stimuli) amid tourism type particularities and the unique elements of the resort in question, offering a range of action to the "universe of sensations" manifestation.

Outlining the "universe of sensations", characteristic to balneotherapy resorts, provides support to strengthening the symbolic values in the minds of consumers, which in this context are coupled with the touristic experience through the five senses. The clear delineation of stimuli that define and/or differentiate balneotherapy resorts helps to position and to create, respectively, a sensory profile integrated in the destination's image, adding value both by the emotional value of tourism products within it, and by the relationship of the destination with the consumer. Enhancing the emotional value leads in this way to the formation of a positive attitude towards the balneotherapy destination, which is an important component in the study of tourism services consumer behavior.

Note

(1) Questionnaires were filled in by students of the Faculties of Marketing, Commerce, Agrifood and Environment Economics (Bachelor's degree cycle, class of 2012/2013, and Master's degree cycle, class of 2013/2014) from the University of Economic Studies, and of the Faculty of Entrepreneurship, Business Engineering and Management from the "Politehnica" University of Bucharest, class of 2013/2014, whom we would like to thank this way.

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Model of analysis of the correlation between the population and the labor force market

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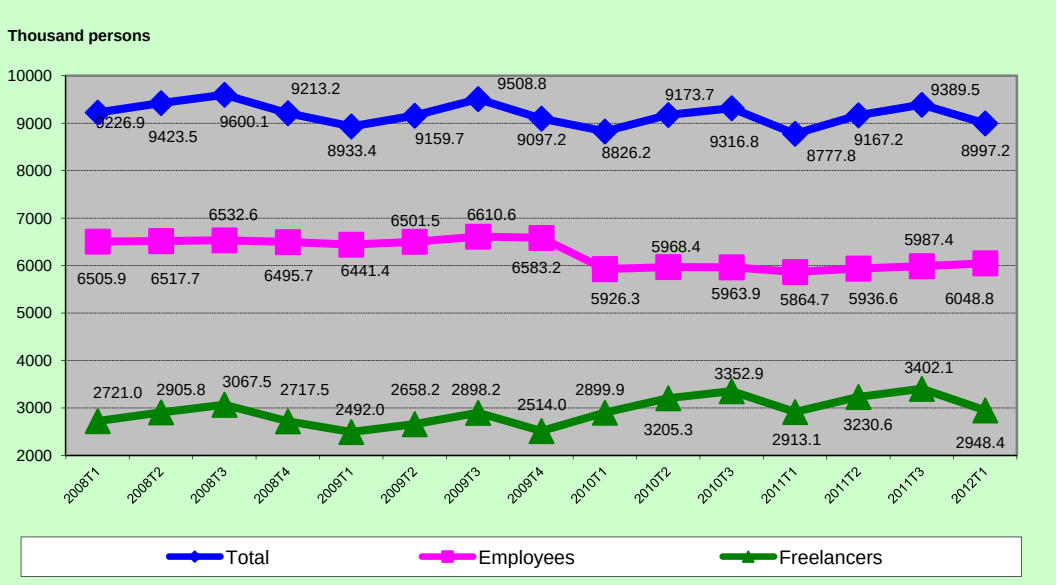
Abstract. *The occupied population includes all persons – both employees and freelancers – who develop a productive activity within the production limits of the European Accounts System. In this figure it is included the number of employees determined in compliance with the accounts that take into consideration both data sources used to determine the cost of labor force occupation, such as the Survey on labor force in households (AMIGO), the Inquiry regarding the cost of labor force (S3), Annual structural survey in enterprises (ASA), and also administrative data sources (information provided by the Ministry of Foreign Affairs, Ministry of Labor, Family and Equality of Chances, Ministry of Interior and Administrative Reform etc.), accounting situations of commercial companies.*

Keywords: employee; methodology; market; unemployment; occupation.

JEL Classification: J62.
REL Classification: 12B.

The curve of the following chart shows the number of occupied population, by trimesters, in 2009-2012. The occupied population was some 9.6 million people, with high values in quarter 3 2008 (9.6 million), respectively quarter III 2009 (9.5 million), to reach 9.1 million persons in trimester III 2010. In 2012, 1st Quarter, the total occupied population was 8,997 million persons, of which 6,049 employees and 2,948 free lancers).

Employees represent all the persons working mainly on the basis of a formal or informal contract, for other resident institutional entity, in exchange for wages or some equivalent pay. The number of employees, the second curve, shows a level oscillating between 6.4 million in quarter II 2009 and 6.6 million in trimester III 2009, 6.5 million in trimester III 2010, 5.9 millions in trimester II 2011, reaching the level of 6.1 millions in trimester I 2012.



Source: National Institute of Statistics.

Figure 1. *Occupied population according to the methodology of the European Accounts System, 1995*

We state that the number of employees includes those working in the hidden economy, established according the computation methodology.

Another category is represented by the independent workers (freelancers), they being the sole owners or co-owners of the entities without judicial personality

they work in. In this category, can also be included: family workers, non-paid and home workers that manufacture for market; workers that exert, both individually and collectively, productive activities regarding exclusively the final consumption or formation of capital on their own account. Their number oscillated between 2.5 millions in 2009 and 3.1 millions in 2008, to reach 2.4 millions in 2010, 2.6 millions in 2011 and 2.49 millions in 2012.

The occupied population, according to the SEC methodology, is the sole indicator that indicates the human potential of the occupied labor force that can be used to determine the social productivity of labor as a ratio between the GDP and the occupied population.

The evolution of the productivity of labor is, within the series, fluctuant enough, from positive elevated levels, such as in quarter III 2008, of 10.7%, to constant decreases starting quarter I 2009 until quarter I 2010, to record a comeback to a positive trend, of 1.6% in quarter II 2010 against the previous year, of 1.9% in quarter III 2010 against quarter III 2009. In 2011 and during the six months of 2012, the productivity have not manifested significant oscillations, but recorded a low level.

Real hourly productivity marks, in principle, the same evolution as the real productivity per occupied person.

In the analysis of the occupied population, it can be observed the percent evolution of the structure occupied regarding the great employees categories and individual entrepreneurs.

In this context, according to the European Account System edition 1995 also, the employees hold a weight of some 70% out of the occupied population.

On activity branches, the greatest weight is held by agriculture, with 27.6%, followed by industry, with 22.5%, and transports, with 21%.

The indicator occupied population of Romania compared to other countries proves a concerning discrepancy in negative way and where we think the attention of decisional factors must be focused.

In 2011, Romania, with a rate of occupation of 60.7%, was among the countries with values below EU27 average (for which, the value of the indicator was 64.5%).

The greatest values of the occupation ratio in 2011 were recorded in: Netherlands (76.3%), Denmark (74.1%), Sweden (72.9%), Austria (71,4%) and Germany (71.0%).

In most EU27 member states, the occupation ratio in 2011 was increasing against the previous quarter, excepting four member states, in which case slight declines were observed (between 0.1 and 0.4 percent points): Portugal, Lithuania, Luxembourg and Belgium. At the level of EU27 the increase against the previous quarter was +0.7 p.p.

Against the same period of 2009 the occupation ratio was in decline in most European states. At the level of EU27 the decrease was -0.5 p.p. The exceptions are six member states, for which the occupation ratio remained at the same level or increased slightly (at most 1.0 p.p.) – among these, Romania. In the case of Romania, the increase of +0.7 p.p. recorded in 2011 against 2010 produced on the background of occupation characteristics of our country, where the agricultural sector continues to hold a significant weight.

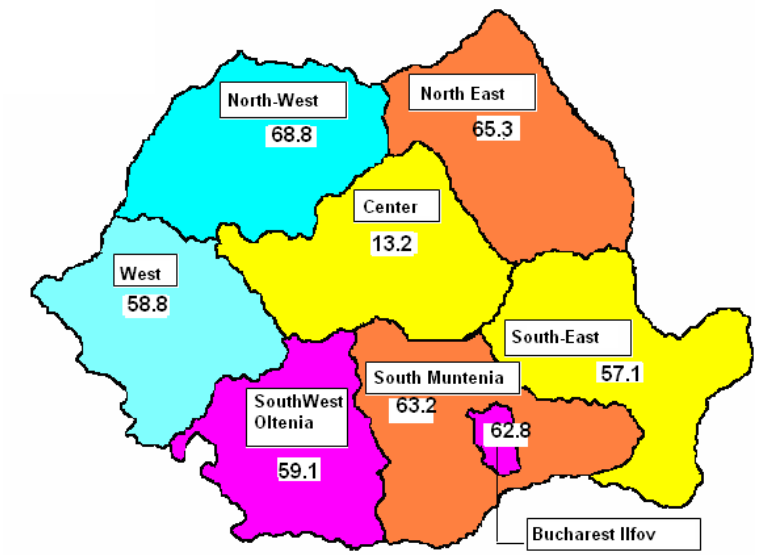
In Europe, the most significant declines in 2011 against 2010 were recorded in: Estonia (-3.9 p.p.), Lithuania (-3.3 p.p.), Bulgaria (-3.0 p.p.) and Latvia (-2.1 p.p.).

In 2011, in Romania, the weight of employees in total occupied working age population was 66.1% – one of the most reduced in Europe (the next-to-the-last place, after Greece). In the same time, the weight of non-employees in agriculture (mainly employees on their own and family non-paid workers) was 26.2% – the greatest in Europe.

The increase of occupation in 2011 against the previous periods occurred on the background of transition towards agriculture, phenomenon visible from:

- Reduction of employees weight (by 2.1 p.p. smaller in 2011 against 2010);
- The increase of the weight of non-employees in agriculture (mainly workers on their own and family workers): by 3.0 p.p. against 2008 and by 1.8 p.p. against 2009.

According to the provisional results of the Survey on Labor Force (AMIGO), in 2011, the occupation ratio of the working-age population was 60.5%; increasing by +0.3 p.p. against the end of 2010. Regarded through the prism of distribution by development regions, the smallest occupation ratio was recorded in the Center region (53.2%) and the greatest in the North East region (65.3%).



Source: National Institute of Statistics.

Figure 2. *Territorial disparities of the occupation ratio (%)*

Occupation rates greater than the national average (60.1%) were recorded only in two regions where the agricultural sector is significant – North-East (65.3%) and South (63.2%), and also in Bucharest Ilfov (62.8%), where labor force is drawn into the services sector. The highest growths, established by chain indexes, were recorded in the North East region and South Muntenia, and the highest decreases were emphasized in Bucharest Ilfov and South-West Oltenia.

Information regarding the "budget sector" must be carefully analyzed, because the data refer to the statistics from economic activities (aggregated on homogenous activity) according to CAEN Rev.2: pubic administration, education, respectively health and social assistance (including private education – some 2%, respectively some 4.5% for health and social assistance), excluding the armed forces and assimilated personnel (MApN, SRI, MAI etc.).

These statistics do not take into account the financing form, their purpose being to provide information on economic activities, according to CAEN Rev.2.

The budgetary sector was characterized, during the period 2009-2012, by continuous decreases of the number of employees. The most accentuate declines were recorded in 2010 and during the first nine months of 2011.

The effective of employees at the end of 2011, belonging to the budget sector, reached almost 947 thousand persons, the declining trend continues. Thus, in the

public administration were 199.0 thousand persons, in education 377.4 thousands and in health and social assistance 357.8 thousands.

Comparatively to the end of 2010, the effective of employees decreased by 59 thousand persons. Out of these, some 40% came from the pubic administration and 60%, in almost equal proportions, form education, respectively health and social assistance.

Also, declines in the effective of employees recorded in the pubic administration units can be found in the secondary activities developed by these entities: cultural, sport, and recreational activities, landscape design and services for buildings, agriculture, water supply, sanitation, waste management, de-contamination, constructions, transport and storage, production and supply of electrical and thermal energy, gases, hot water and air conditioning, lease and sub-lease of real estate goods etc.

As for the evolution of average monthly salary gains during the period 2009-2011, they were characterized, mainly, by declines from one month to another, excepting the months when annual and occasional premiums were granted, according to the national law, sums from other funds.

Following the application of legal provisions (Law No. 118/2010 regarding some measures for the recovery of budgetary equilibrium), of reduction by 25% of salary gains for the personnel in the budgetary sector, in trimester III 2010 the lowest values of the net average salary gain for the last years were recorded, that is: public administration 1,404 lei, education 1,063 lei and health and social assistance 1,036 lei.

In October 2010, in all the activities of the budget sector, salary gains were recorded, due to the payments of occasional premiums (including holiday wages), of sums from other funds (including the previous periods), of cumulating functions for teachers, also for payments of supplementary hours worked in some medical facilities. Also, the increase of salary gain was influenced by the firing of personnel with small wages from the sector.

However, compared to June 2010 (the month that preceded the application of Law No. 118/2010), the net average salary gains from October, were 18% – 21% below the level for June.

Compared to previous October, net average nominal salary gains form October 2010 was 24% lower in education, 22% lower in health and social assistance and 20% lower in public administration. In 2011, the salaries held at these levels, as

we expect their block in 2012, or even their reduction, if the effects of the crisis will impose.

The effect of economic crisis was felt in the demand for labor force in the budgetary sector. In 2011 the lowest values of the vacant work places ratio was recorded, since 2095 until present, in public administration, respectively health and social assistance.

Compared to the previous year, in 2011, the vacant work places ratio decreased in health and social assistance (by 0.20 p.p.), public administration (by 0.11 p.p.), and in education it increased (by 0.12 p.p.).

The evolution of the vacant work places ratio was more accentuated in health and social assistance (by 2.53 p.p.), followed by public administration (0.67 p.p.), and for education the ratio kept unchanged.

In 2011, little more that 10% of the total vacant work places were recorded in each of the activities: public administration (2.7 thousand vacant places), respectively health and social assistance (2.4 thousand vacant places), while in education the demand for work places was of some one thousand. Comparatively against the previous periods, in health and social assistance, the most significant decrease of number of vacant places recorded: by 7.8 thousand vacant places, representing more than two-thirds (67.5%) of the number of vacant places that diminished within a year in the whole economy, respectively with 0.8 thousand vacant places against the previous trimester.

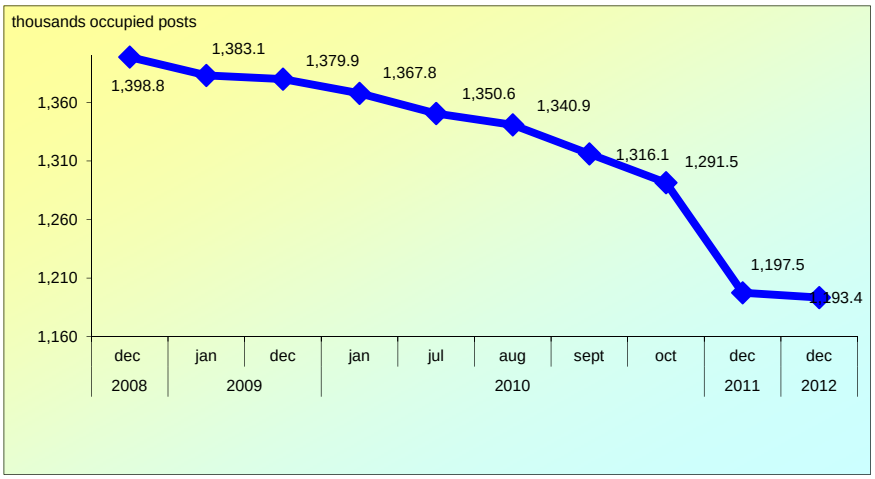
In public administration, in 2010-2011, the number of vacant work places decreased by 0.7 thousand, and against 2009, by 2.2 thousand. In education, a slight increase of the demand for work places recorded, as against the previous year, following the start of the new school year. In 2010, the weight of employees in pubic administration, defense and social security in the public system was 7.8%, decreasing by 0.3 p.p. from 2009. At the level of EU, the indicator had the value of 8.4%. Among the European countries, the evolutions against 2010 are divergent: as the decrease trend is observed in 12 countries, increase in 12 while in three countries the weight of administration employees remained constant against the same period of the previous year. In 2011, with only 6.3% of the employees working in the field of health and social assistance, Romania was placing among the last four countries in Europe. Lower weights were recorded only in Cyprus (4.4%), Latvia (5.4%) and Bulgaria (5.6%).

Amongst the European countries, the highest weight was recorded in Denmark (20.2%). At the level of EU27, the value of the indicator was 11.2%. Against the

previous year, in almost all European countries the increase trend can be observed; five countries make exception: Cyprus, Belgium, Sweden, Finland and Luxembourg. In Romania the increase was by +0.2 p.p.

Regarding the weight of the employees in education in total employees, the value recorded in 2010 was 6.3%. This value, even in slight increase (+0,3 p.p.) against the previous year, is the smallest in Europe. The highest values of the indicator were recorded in: Lithuania (12.5%), Sweden (12.0%), United Kingdom and Latvia (in both countries 11.8%) and the smallest (apart from Romania) in: Germany (6.6%), Bulgaria (6.8%).

The increasing trend against the same period of the previous year can be observed in almost all European countries (excepting four countries). The information corresponding to the financing form are managed by the Ministry if Finance, according to the provisions of OUG no. 48/2005, with subsequent completions and modifications. In the basis of this ordnance, the main credit orders for the pubic institutions financed from the state budget, social security budget, special funds budget and of the autonomous public institutions integrally financed from own revenues, submit, monthly, to the Ministry of Pubic Finances, for the previous month, situations regarding the monitor of the number of posts and personnel expenses, for their own apparatus and for public institutions in their subordination, co-ordination or authority, regardless the financing molde. The number of posts occupied in the budgetary sector, according to the MPF, was in December 2010 of 1,190.5 thousands, decreasing against the previous periods.



Source: National Institute of Statistics.

Figure 3. *Evolution of the number of occupied posts in the budgetary sector during the period December 2008 – December 2012*

Also, as an effect of OUG no. 48/2010 for the modification and completion of some normative in the health domain, for de-centralization, starting August 2010, some hospitals in the own network of the Ministry of Health passed to the sanitary network of the public administration authorities, effecting a transfer of occupied posts from central public administration to the local one.

A direct effect of the economic crisis, the phenomenon of decline for the number of employees was accentuated during the period 2009 – June 2012.

To be remarked the fact that the monthly data regarding the number of employees and net or gross average salary gains are aggregated on the homogenous activity of the units; it means that for the units that developed more activities (secondary) apart from the principal one, secondary activities are included, each one of them, to the economic activities according to proper CAEN Rev.2.

Unlike industry and services, activity sectors that recorded decreases of the number of employees in the last month of each quarter compared to the corresponding month of the previous quarter, in agriculture and constructions, slight increases occurred, due to the seasonal character of these activities. Until trimester II 2010, the most significant decreases in the number of employees occurred in the sectors with preponderant number at the level of national economy, that is, industry and commercial services. In September against June 2010, the effective of employees in social services, respectively commercial ones, known the greatest declines (by 29.0 thousand persons, respectively by 18.7 thousand persons). The decrease of the number of employees continued in 20111 – June 2012 also.

Comparative to January 2011, the effective of employees decreased in all activity sectors, exception some slight increases recorded in agriculture in March, June and September 2011.

In October 2011, as against the previous month, the decline trend of the number of employees continued in all sectors. Significant are the decreases of the effective of employees in the social services sector (-10.9 thousand persons), respectively commercial services (-9.3 thousand persons). These declines, have represented 68% of the total decrease of the number of employees compared to the previous months.

For an extended presentation of the infra-annual statistic indicators, they were estimated monthly, on property forms: public property includes the entities with full of partial state ownership; private property includes the entities with major

private ownership, full private and integral foreign (co-operative and community entities were excluded) and the public ownership of national and local interest.

During 2011, the number of employees fell by some 214 thousand persons, mainly inside units with private property. Meanwhile, the private sector has, as number of employees, the major weight in economy, some 67. In the private sector, in 2011, the most accentuated decrease of the number of employees was recorded (-116 thousand persons).

In 2011, the decrease of the effective of employees had a slower rhythm compared to the previous year, but moved from the private sector towards the public one.. As number of employees, these units hold 25% of the total number of employees in economy. The decrease of the number of employees in the public administration entities, of local and national interest, in October 2011 against the beginning of the year represented 39% out of the total decrease.

Regarding the whole public sector (public property + public property of national and local interest), which holds some 31% of the number of employees, the decrease was by 31 thousand persons in October 2011 against January 2010.

The number of insurants includes the persons with full or part time contracts that are in the declaration regarding nominal situation of insurants provided by employers. The insurants who, during the month, had only unemployment support or compensating payments are not included, even if they are present in the nominal declaration received from employers. Only those insurants are included who had been declared with a number of worked days equal to the month's number of work days, which had not benefited from medical allowances. The age groups are calculated for the respective reference month.

To allocate on groups of gross salaries realized, the incomes were cumulated for the insurants with more contracts.

The number of insurants with contract suffered continuous decreases, both as total and as age groups. So, only during the period June-December 2011, the number of employees fell by 97 thousands.

Regarding the repartition of employees on age groups, along the entire analyzed period, the major weight is held by the employees within the 30 – 44 years group.

Under the aspect of employees' repartition on intervals of gross realized salary gains, in June 2008, those making gross gains less or at most equal to 600 lei represented 22% of total, while 66% made gross salary gains between 601 and

3000 lei. To be noted that in June 2008, the average gross salary per economy was 500 lei.

During the period June 2010 – June 2012, the weight of employees that realized gross gains below or equal to 730 lei grew, reaching some 21%. Meanwhile, the weight of employees that made gross salary gains between 731 and 3,000 lei went little over 75% of the total employees.

As for the weight of employees with gross gains realized above 8001 lei, it remains constant across the period analyzed and represented some 1.45%.

In 2012 the most vacant workplaces at 1000 unemployed BIM were in Netherlands. The evolution of unemployment entries was oscillating, recording a minimum point in November 2008 (51,242 persons) and a maximum in January 2012 (87, 314 persons).

The index of real salary gains follows closely the evolution of the index for the average net nominal salary gain, as it results from the chart that emphasizes the trends recorded in the last two years. The phenomenon is explained by the decrease of the inflation growth rate that is taken into consideration at the determination of the real salary gain.

During the year, fluctuations of the salary gain are recorded, mainly determined by the grant of occasional premiums (13^{th} salary, holiday premiums, premiums in March/April, or December, for religious feasts). They influence the increases of decreases depending on the period in which they are granted, leading, eventually, to the blur of the fluctuations of the monthly salary gain at the level of the entire year.

The salary gain, both in nominal and real terms, was lower in most months in 2011, compared to the previous month (exception - March, when premiums were granted for the Easter, leading to an increase of the nominal and real salary gains as against the previous month).

On activities of the national economy, the maximum values of the net average salary gain are in the financial brokerage (with percentage between 115-146% above economy average). At the opposite pole, with the lowest net average salary gain, are placed the hotels and restaurants activities (with percentage between 41% and 43% below economy average). To be noted that both sections hold similar percentage as numbers of employees at the level of the national economy (some 2-3% each).

In 2011, compared to the previous year, the net average salary gain had a slightly decreasing trend, for most economic activities (excepting those pertaining to the budgetary, hotels and restaurants, real estate transactions and shows, cultural and recreational sectors).

In 2011, the average net salary gain realized on various activities of the national economy has recorded, both increases and decreases, in almost equal measure. So, in the economic sector, slight increases were recorded, the greatest being in the activity of production and supply of electrical and thermal energy, gases, hot water and air conditioning (+1.8%). At the opposite pole, with the most significant decrease of the net average salary gain, was the extractive industry (-18.9%, because of the premiums granted for „oilers' day" in the previous month).

In the public property units (fully state-owned or state-owned majority), the average net salary gain has the highest values. The lowest average net salary gains are recorded in the privately-owned entities (privately-owned majority, fully private, fully foreign), that hold the majority weight of the number of employees (some 63%). Exception, since July 2010, following the application of the Law no. 118/2010, the lowest level of the average net salary gain was in the public entities of national and local interest.

The number of pensioners with pensions above 1,000 lei represented, at the analyzed moment, just the fifth part (21.1%) of the total social security pensioners.

The average number of social security pensioners had a descending quarterly evolution, from 2002 until 2012.

Table 1. *Average number and average monthly pension of pensioners and social support beneficiaries*

	years	Average number of pensioners - thousands-				Average pension Lei/month			
		Trim. I	Trim. II	Trim. III	Trim. IV	Trim. I	Trim. II	Trim. III	Trim. IV
Pensioners -total (I+II+III)*)	2011	5628	5597	5576	5555	739	754	758	760
	2012	5531	5520	5019	5003	766	784	793	8019
Social insurance pensioners - total Of which:	2011	5619	5588	5568	5547	740	755	758	761
	2012	5523	5514	5007	4997	767	783	798	8018
- state social insurance pensioners	2011	4759	4744	4739	4733	763	775	776	777
	2012	4720	4710	4635	4630	777	777	785	801

Source: National Institute of Statistics.

In quarter II 2012, the number of social security pensioners has followed an ascending trend, reaching 5,531 thousand persons.

As for the state social security pensioners, after being on a continuous ascending trend, since quarter II 2007 (4,641 thousand persons), since quarter III 2010, recorded a decrease, to 4,759 thousand persons, in 2011 and 4,720 thousand persons in quarter I, 2012.

In 2011, comparative to the corresponding quarter of the previous year, the social security pensioners had the possibility to spend averagely with only 26 lei (+3.6%) additional.

In 2012, the index of the real pension decreased as against the previous year (96.0% from 118.1%); subsequently, the purchasing power of the social security pension declined. In quarter I, 2012, the average pension was 766 lei/month.

In the analyzed period, some 3/4 of the total departments have recorded a greater number of pensioners compared to the employees. In the top of this group, there are Giurgiu and Teleorman where the report pensioners/employees was almost 2 (1.9) pensioners for one employee.

The Bucharest municipality was at the opposite pole, recording the lowest value of the report (0.6).

The departments in which the ratio is 1 to 1 represents a tenth from the total.

According to the provisional results of the Survey on Family Budgets realized by NIS in 2010, the average monthly total revenues for a household were 2,257 lei, a value relatively constant during 2007-2012. The structure of the money incomes of households reveals the same trend as the total revenues.

In 2011, the average total revenues for an urban household were by 32.3% higher.

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Does convergence of incomes still exist among developed economies? Time series evidence in G7 countries

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Abstract. *In this paper, we examine the presence of convergence of real per capita incomes in G7 countries for the period of 1870-2008, using the group average and pairwise approach. Lee and Strazicich (2003, 2004) unit root tests that provide for structural break(s) are utilised to verify incidence of stochastic convergence, a necessary condition for conditional convergence, while Carlino and Mills (1993) method is employed to confirm the existence of β-convergence, a sufficient requirement for conditional convergence. Among the possible 21 pairwise stochastic convergence cases, we observe nine pairwise stochastic convergence cases, with Japan as the only country not to have stochastic convergence with any of the G7 countries. Although Germany, France and the US stochastically converge towards the G7 average, only the US conditionally converges to the average of G7 countries.*

Keywords: unit root tests; structural breaks; convergence; G7 countries.

JEL Classification: O47; C32.
REL Classification: 18C, 20F.

1. Introduction

One of the main importations of exogenous growth theory is convergence of cross-national outputs. In a framework of diminishing marginal returns, neoclassical model projects the difference in per capita income of countries to disappear overtime such that initially low income countries will grow more rapidly to catch up with initially high income countries. Economies with similar attributes such as population growth, depreciation rate, savings rate and technology are assumed to converge to the steady-state, which is referred to as absolute convergence. Heterogeneity in attributes of countries is accommodated in Solow model, which argues that economies with varied characteristics will simply converge to their respective steady states. Called conditional convergence, this assumption is less restrictive in comparison to absolute convergence. These propositions have been disputed by endogenous growth theory which suggests divergence of national outputs in a world of constant marginal productivity of capital (at the aggregate level) and dissimilar attributes (Romer, 1990, Aghion, Howitt, 1992).

The two opposing views on convergence spurred empirical scholarships, especially on developed countries. The initial set of empirical literatures such as Baumol (1986), Dowrick and Nguyen (1989) and Sala-i-Martin (1996) apply cross-sectional techniques of comparing countries growth rates of income with their respective initial incomes. Cross sectional techniques usage in assessing income convergence was challenged by Friedman (1992), and Quah (1993). Subsequently, some authors venture into the utilisation of time series in researching convergence of incomes. Common among these new set of literatures is the adoption of OECD (Organisation for Economic Co-operation and Development) countries as representative of developed countries to show convergence is more present in developed countries relative to developing countries (Greasly, Oxley, 1997, Li, Papell, 1999, Strazicich et al., 2004). However, OECD consists of emerging countries such as Mexico, Chile and Turkey that cannot be considered to be fully industrialized. On the other hand, economic blocs such as G7 are purely industrialized countries club. Most of the past literatures on the "OECD countries" are also noticed not to extend beyond 1994[(1)]. As shown in Table 1 (in which the trend of growth rate income in G7 is separated between the periods of 1871-1994 and 1995-2008), trajectory of growth rate of per capital income has changed drastically. Generally, it is illustrated that most of the growth rate of per capital income of G7 countries has nosedived. For example, Japan experienced 2.969% growth rate in the period 1871-1994 to catch-up with most G7 countries.

However, it only recorded 1.091% for the period 1995-2008. With the exception of UK, all other countries also suffer varying degrees of crash in the growth rate of their incomes between these periods. The slump of the US is lowest at 2.026% in 1871-1994 and 1.809% in 1995-2008. We also observe that previous studies concentrate on multivariate procedures, in which a common benchmark is utilized to test for convergence for all individual countries involved. The results generated are usually generalized to individual income pairs, though heterogeneity in pairwise convergence(s) is ignored. Moreover, most time series consider merely stochastic convergence, but Carlino and Mills (1993) has shown that this is merely a necessary condition for conditional convergence as assumed in the neoclassical model and a further test is needed to verify sufficient condition for conditional convergence.

In this study, we explore the existence of convergence in G7 countries for the 1870-2008 period using Lee and Strazicich (2003) unit root tests. In addition to using the mean of G7 income as benchmark in a multivariate system, we also investigate convergence in a pairwise (bivariate) system, in which the income of one country is compared to the other. Unlike most of the previous researches on convergence of income, we further examine β-convergence, which has been argued by Carlino and Mills (1993) as being required to fulfil the sufficient condition of conditional convergence. Among the contributions of the study is the use of the longest time series so far in the convergence literature as longer time series usually convey better information (Cheung, Pascual, 2004). The rest of this paper is organised as follows. Section 2 briefly reviews the methodology employed in the study. Empirical findings are discussed in Section 3 and finally, Section 4 presents the conclusion of the study.

Table 1. *Growth rate of G7 incomes, 1871-2008*

Period	Countries						
1871-1994	Canada	France	Germany	Italy	Japan	UK	US
Mean	2.107	2.090	2.155	2.137	2.969	1.409	2.026
Median	2.867	2.277	2.624	2.531	3.080	1.750	1.990
Maximum	16.239	49.824	18.234	30.194	17.603	9.479	18.712
Minimum	-16.774	-19.584	-50.893	-21.971	-49.374	-10.787	-21.455
Std. Dev.	5.335	7.342	7.466	5.861	6.875	2.994	5.630
1995-2008	Canada	France	Germany	Italy	Japan	UK	US
Mean	2.096	1.518	1.445	1.246	1.091	2.360	1.809
Median	2.241	1.726	1.415	1.336	1.682	2.478	1.924
Maximum	4.613	3.381	3.211	3.378	3.185	4.286	3.300
Minimum	-2.100	-0.289	-0.276	-0.996	-3.165	0.423	-0.573
Std. Dev.	1.752	0.967	1.042	1.137	1.698	0.897	1.229

Source: http://www.ggdc.net/maddison/Maddison.

1. Methodology

We employ the relative real per capita income to assess stochastic convergence and β-convergence of G7 countries, which are Canada, France, Germany, Italy, Japan, United Kingdom (UK), and the United States of America (US)[(2)]. The data, which are in annual form for 1870-2008, was extracted from Angus Maddison's homepage at http://www.ggdc.net/maddison/Maddison. In order to check for conditional convergence, we apply the procedure introduced by Carlino and Mills (1993) procedures, which consists of two stages. The first stage deals with the verification of stochastic convergence by using the income of a country relative to average income of all G7 countries, such that:

$$y_{it} = \ln\left[GDP_{it} / \left(\sum_{i=1}^{I} GDP_{it} / I \right) \right] \quad (1)$$

Here the relative income y_{it} is defined as the ratio of per capita real GDP of country i to the group average. I is the number of countries in the sample. Unit root is performed on the resulting relative income – y_{it} to determine if stochastic convergence exists. This idea is applicable in bivariate case by simply replacing the term of G7 average income with the income of a second country (Bernard, Durlauf, 1996). The study uses this second method for bivariate stochastic test. In either case, failure to reject null hypothesis of unit root demonstrate the case in favour of stochastic convergence. Nevertheless, rejecting null hypothesis of a unit root is a necessary but not a sufficient condition to guarantee conditional convergence, which is met when stochastic convergence and β-convergence exist (Galvao, Reis Gomes, 2007). The second stage involves the verification of β-convergence, which is satisfied if the countries with initial lower income grow faster than those with initial incomes

$$y_{it} = \tau_i + \beta_i t + \varepsilon_{it} \quad (2)$$

Here ε_{it} is an error term that satisfies the classical assumptions i.e. zero mean and constant variance. For β-convergence to occur, the growth rate(s) of y_{it} must be negative (positive) if the initial value(s) of y_{it} is positive (negative). In other words, τ_i and β_i must produce dissimilar signs. To examine stochastic convergence, time-series offer several unit root tests, which include Augmented Dickey Fuller (ADF) test that does not allow for structural breaks. However, a cursory look at Figure 1, which contains the trajectory of logarithm of per capita income of each country relative to the mean of G7 countries, reveals the presence of structural breaks. Further investigations show that most of these structural breaks are within the vicinity of the Second World War of 1937-1949. Therefore, ignoring structural breaks in the estimations may generate misleading results. There are unit root tests which provide for structural breaks. With the exception of

Lee and Strazicich (2003, 2004) tests, many of these tests are characterised by several deficiencies (Lee, Strazicich, 2001), Lee, Strazicich (2003, 2004) introduced a method of unit root with an endogenous structural break which is unaffected by breaks under the null.

$$\Delta y_t = \delta^{'} \Delta Z_t + \phi \bar{S}_{t-1} + \sum_{i=1}^{p} \chi \Delta \bar{S}_{t-i} + \mu_t \tag{3}$$

Here Δ represent the first difference operator. $\bar{S}$ denotes a de-trended variable such that $\bar{S}_t = y_t - \hat{\psi}_x - Z_t \hat{\delta}_t, t = 2..., T$. $\hat{\delta}$ depicts a vector of the coefficients in the equation of Δy_t on ΔZ_t, and $\hat{\psi}_x = y_t - Z_t \hat{\delta}$, with y_1 and Z_1 representing the first observations of y_t and Z_t, respectively. μ_t is the error term, Considering two-time changes in level and trend, $Z_t = \left[1, t, D_{1t}, D_{2t,} DT_{1t}, DT_{2t}\right]'$ where $D_{jt} = 1$ if $t \geq T_{Bj} + 1, j = 1, 2,$ and 0 otherwise, and also $DT_{jt} = t$ if $t \geq T_{Bj} + 1, j = 1, 2,$ and 0, otherwise. The locations of T_{Bj} which are break dates, are given by $\lambda_j = T_{Bj} / T, j = 1, 2$. Generally, $LM_\tau = Inf_\lambda \tilde{\tau}(\lambda)$ is used in searching for the break dates, which minimises τ (*t-statistics)* for the null hypothesis of unit root (ϕ=0). Augmented terms of $\Delta \bar{S}_{t-1,}\ i = 1, \ldots k$ are included to circumvent the problem of serial correlation in errors (Lee, Strazicich, 2003, 2004).

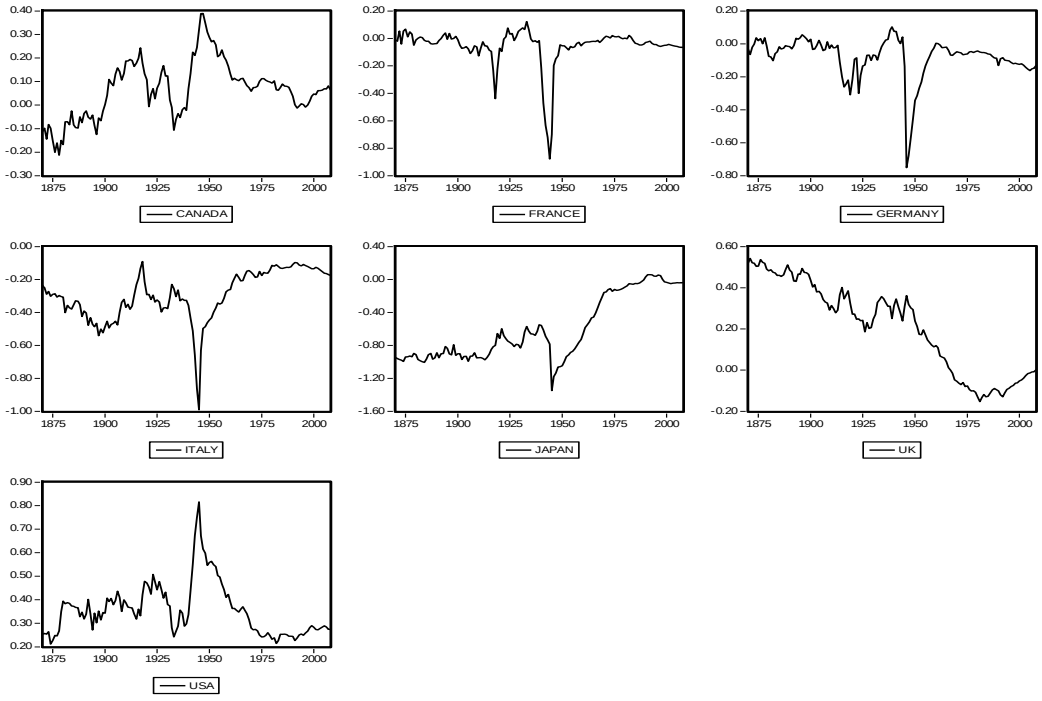

Figure 1. *Per capita income relative to the G7 average, 1870–2008*

Based on the dummies of structural breaks, β-convergence specification needs to be re-specified as $y_t = \zeta_0 + \zeta_1 t + \zeta_2 D_{1t} + \zeta_3 D_{2t} + \zeta_4 T_{1t} + \zeta_5 T_{2t} + \varepsilon_t$ where $\tau = \zeta_0 + \zeta_2 + \zeta_3$, $\beta = \zeta_1 + \zeta_4 + \zeta_5$ depending on the presence of structural breaks. This is applied on relative incomes of countries which display stochastic convergence with two significant breaks in level and trend. In estimating the β-convergence, for stochastic convergent countries with one-break, we impose $\zeta_3 = \zeta_5 = 0$ and with no break, we further impose $\zeta_2 = \zeta_4 = 0$.

2. Empirical findings

The unit root tests of each country's relative income to the average income of G7 countries are displayed in Table 3. We employ the Model C of Lee and Strazicich (2003) to examine relative income series, while allowing for two breaks in the regression. Furthermore, we are able to reject the null of unit root for Germany and the US; and France at five and one percent significance levels, respectively which indicate stochastic convergence of these countries' income towards the average G7 income. For Canada, Italy, Japan and UK, we are not able to reject the null of unit root, illustrating idea of no convergence of these countries towards the G7 average. Excluding Bernard and Durlauf (1996), our findings are relatively at variance with the previous studies. The findings on break dates reveal some interesting observations. About 47% of the breaks lie within the Second World War of 1937-1949, while about 13% of breaks fall within the range of First World War of 1912-1927. Identical to the previous studies, it is obvious that most breaks occur around the two wars. Despite the evidence provided by the preceding results, pairwise stochastic convergence within the countries is further investigated(3).

Table 3. *G7 Average unit root tests*

Test	Lee and Strazicich test				
Country	*k*	T_{B1}	T_{B2}	T-Stat	Break point(s)
Canada	3	1916	1943	-4.719	(0.4, 0.6)
France	3	1938	1951	-8.090***	(0.4, 0.6)
Germany	8	1943	1957	-5.773**	(0.4, 0.6)
Italy	1	1912	1946	-4.679	(0.4, 0.6)
Japan	8	1943	1967	-5.076	(0.6, 0.8)
UK	8	1960	-	-3.182	(0.6)
US	8	1937	1959	-5.716**	(0.4, 0.6)

Critical values for Lee and Strazicich (2003)

Y									
	0.4			0.6			0.8		
	10%	5%	1%	10%	5%	1%	10%	5%	1%
0.2	-5.27	-5.59	-6.16	-5.32	-5.74	-6.41	-5.33	-5.71	-6.33
0.4	-	-	-	-5.31	-5.67	-6.45	-5.32	-5.65	-6.42
0.6	-	-	-	-	-	-	-5.32	-5.73	-6.32

T_B is the estimated break points. *, **, *** imply 1%, 5% and 10% levels of significance.

Critical values in the lower panel of Table 3 are from Lee and Strazicich (2003), while the critical values for Lee and Strazicich (2004) one break tests are -5.05, -4.50 and -4.18 for at the 1, 5 and 10 % levels of significance.

In Table 4, the findings of stochastic convergence test of countries' incomes in a pairwise framework are shown. We are able to reject the null in favour of convergence in nine cases out of the possible 21 bilateral convergence links. Canada income converges with incomes of three European countries i.e. France, Italy and Germany, without converging with income of its neighbour, the US. This can be explained by the fact that Canada and EU countries are similar in aspect of lower factor mobility than in the US. More interesting is that the income of the three Eurozone countries in the sample (France, Italy and Germany) converges, whereas there is no convergence between UK and these Eurozone countries. More countries converge to US's income than any other country. Japan's income is noted as not converging with other countries' income. Despite experiencing miraculous economic growth in the post-war period (Yamamura, Shin, 2008), several factors may account for no convergence of Japan's income with other countries such as shocks to international economy in 1973 (Webber, 2001) changed in fortunes of the world economy since 1980s (Linden, 1980) and the collapsed of the bubble economy in the early 1990s (Seya, Tsutsumi, Yamagata, 2012).

Table 4. *Pairwise unit root tests*

Test	Lee and Strazicich test				
Country	*k*	T_{B1}	T_{B2}	T-Stat	Break point(s)
France-Canada	4	1938	1951	-5.368*	(0.4, 0.6)
Germany-Canada	6	1943	1957	-5.688**	(0.4, 0.6)
Italy-Canada	8	1938	1956	-5.383*	(0.4, 0.6)
Japan-Canada	0	1958	-	-3.423	(0.4)
UK-Canada	4	1927	1945	-4.553	(0.4, 0.6)
US-Canada	8	1916	1947	-4.300	(0.4, 0.6)
Germany-France	5	1933	1948	-5.391*	(0.4, 0.6)
Italy-France	8	1911	1924	-5.407*	(0.2, 0.4)
Japan-France	1	1920	1965	-4.940	(0.4, 0.6)
UK-France	2	1938	1951	-4.900	(0.4, 0.6)
US-France	8	1938	1955	-6.628***	(0.4, 0.6)
Italy-Germany	1	1906	-	-5.292***	(0.2)
Japan-Germany	5	1922	1956	-4.436	(0.4, 0.6)
UK-Germany	0	1944	1957	-4.631	(0.4, 0.6)
US-Germany	7	1942	1959	-5.590*	(0.4, 0.6)
Japan-Italy	8	1905	1965	-4.240	(0.2, 0.6)
UK-Italy	7	1959	-	-3.024	(0.6)
US-Italy	7	1938	1956	-4.875	(0.4, 0.6)
UK-Japan	2	1943	1969	-4.206	(0.6, 0.8)
US-Japan	1	1959	-	-3.836	(0.6)
US-UK	8	1928	1941	-7.561***	(0.4, 0.6)

T_B is the estimated break points. *, **, *** imply 1%, 5% and 10% levels of significance.

Finally, we test for β-convergence for the France, Germany and the US that were established as stochastically convergent countries, using the G7 average income. The results are presented in Table 5, which illustrate that France coefficients are not significant. Although Germany's coefficients are significant, they do not produce the required opposite signs. By contrast, the US appears to satisfy the β-convergence by producing the required signs. This indicates that US is the only country that conditionally converges to the average of G7 countries. Difference in findings between our studies and the previous studies may be due to the inclusion of recent data that includes the period of economy downturn in most G7 countries. The reason is further substantiated with the fact that US suffer the lowest slump of income among these countries, but satisfies both stochastic convergence and β-convergence.

Table 5. *β-convergence for G7 countries*

Country	Intercept and trend	
	τ	β
France	-0.136	-0.001
Germany	-0.045***	-0.003***
US	0.140**	-0.002***

*, **, *** implies significance at 10, 5 and 1%, respectively.
The Newey-West estimator is applied to correct for possible serial correlation and heteroscedasticity.

3. Conclusions

Arising from the fact that testing convergence of national incomes is a means of validating exogenous growth of the Solow model, empirical scholarships on convergence of developed countries outputs have been well documented. Most existing studies consider OECD countries, which actually has emerging economies as members as representative of developed countries. However, studies specifically on G7 countries (Canada, France, Germany, Italy, Japan, UK, and the US), which truly symbolize developed countries, are virtually non-existent. In this study, we examine the occurrence of stochastic convergence in G7 countries for the 1870-2008 period using Lee and Strazicich (2003) unit root tests. In addition to utilising the mean of G7 income as benchmark in a multivariate system, we also investigate stochastic convergence in a pairwise (bivariate) system. We further probe *β*-convergence as proposed by Carlino and Mills (1993) who termed its occurrence as sufficient condition of conditional convergence. Out of the possible 21 pairwise stochastic convergence cases, we observe nine pairwise stochastic convergence cases. These include three cases in which Eurozone countries converging with each other, but sharing no convergence with UK. Japan appears as the only country that is not stochastically converging with any of the

countries. Although Germany, France and the US stochastically converge towards the G7 average, only US conditionally converges to the average of G7 countries.

Notes

(1) An exception is Romero-Ávila (2009), who considered the OECD for the period of 1870-2003. While our methodology (like the other works cited) is within a time series frame work, Romero-Ávila based his work on panel technique.

(2) We consider G7 as against G8 for several reasons. Although Russia joined the G7 to form the G8 in 1997, G7 still retains some features of its Pre-Russia membership years as some meetings continued to be held in G7 format. Moreover, Russia, unlike most other members, cannot be considered as fully industrialized. Lastly, data for Russia is not available for such a long time span.

(3) Pesaran (2007) have introduced a novel approach, in which convergence does not only require the rejection of the null hypothesis of unit root but also co-trending restrictions (in which the linear trend must be insignificant) for convergence hypothesis to hold in a pair wise setting. However, it may be criticized as it neglects possible structural breaks in output gap long-run value due to changes in the structural parameters of economies (Le Pen, 2011).

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Analysis of the correlation between the evolution of the consumer loans and the evolution of household income in Romania

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Abstract. *Study of the literature and the models used in other countries, with higher or lower degrees of development for their financial and banking systems, raise for Romania, in our opinion, several issues which deserve a closer research. One of those issues concerns the fundamentals of real estate prices and the influence of household income, demographic changes and credit access on the dynamics of the housing market.*
Another area of interest is centered on the manifestation of a wealth effect that is associated with owning a property; as such an effect is present in other countries, as reported in literature. The National Bank of Romania defines this phenomenon as "the effect of the wealth value on the decisions of the population and the companies, regarding their consumption and investment decisions". This effect can be generated either by variations in the value of assets owned (stocks, financial assets, real estate, etc.), or by the level of debt (i.e. housing, consumption, investment loans, including payments due). Therefore, such an increase in the population's net wealth or an improvement of companies' balance sheets can manifest a positive effect on consumption and investment, thus benefiting the aggregated demand.
In a future research we plan to study the influence of the real estate market on Romania's economy, especially through lending, construction activity, household consumption and stock market investment, with the aim of measuring this effect. The three directions for research require in-depth analysis of the complex dynamics of the sectors connected to the housing market and the acquiring of pertinent and up-to-date

statistical data which should reflect price changes and other parameters of this field of study.
Given the limitations of our database, with a narrow access to data regarding the direct population consumption, we have chosen to use the values for lending in lei as a proxy, which indirectly mirrors the indicator we wish to include in the research. We believe that the final purpose of the consumption loan reflects, in a significant measure, the population's inclination towards consumption. With this in mind, we will analyze the correlation between the evolution of consumption lending and the population income. From here we will ascertain the inclination towards housing investment.

Keywords: consumption credit; population income; differentiation; normalcy; stationarity; residual autocorrelation; statistical validity.

JEL Classification: C58; D14; E52; G21.
REL Classification: 11B.

1. Database

Our research aims at understanding the mechanisms of the interactions between the real estate market and the rest of the economy, through the analysis of data about the main indicators defining these fields. In concept, the housing market is in no way different from other goods markets, and as such the information of the pricing of such assets is of major importance.

Essential information for our analysis regards data reflecting the evolution of salary income for the population and that for consumption lending. The sources of this data include the periodical reports from the National Institute of Statistics and the reports of the National Bank of Romania or its monthly statistical reports. Also, data for the exchange rates are taken from the interactive database provided by the central bank.

As a general observation, we point out our decision to transform all data from lei to Euro, at the official exchange rate of the last day of the respective time frame. This is justified by the peculiarities of the housing market, the price of all assets being invariably expressed in Euros. Also, loans for housing purposes are, as well, denominated in the European currency, which is the reason we have chosen to use this exchange approach for all the other relevant indicators.

Analysis model

Our model is based on *Wealth Effect Revisited* (Case et al., 2011) and *Wealth Effects out of Financial and Housing Wealth* (Sierminskaya, Takhtamanova, 2007). The first is an effort to understand the behavior of American consumers during 1978-2009, undertaken by Karl Case, John Quigley and Robert Shiller, starting with 2005 and providing evidence of a national wealth effect manifesting in the United States, by correlating income, housing and financial wealth.

The second article, published as Federal Reserve Bank of San Francisco working paper, deals only with data from Canada, Italy and Finland, and shows that the wealth effect on consumption, generated by the real estate, is more powerful than that of financial holdings.

Resuming consumption and investment lending in sustainable conditions is still far away, while taking into consideration the prolonging and even intensification of cross-border financial deleveraging and monetary accommodation competition between the large central banks.

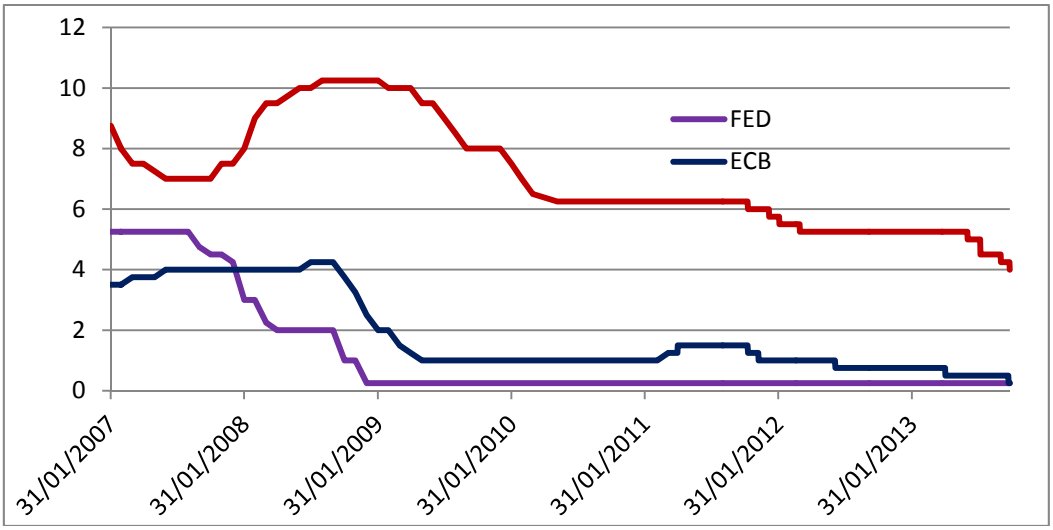


Figure 1. *Central interest rates of FED, BCE and BNR*

Regarding the demand for consumption credit, the continuous reduction of the central interest rate (the last one in November 2013, with a decrease to 4%; see graph), a process which should bring, based on a functional mechanism of transmission and a comfortable monetary space, a favorable adjustment of credit and lending rates. By December 2013, in the last five years, the central bank (see graph) has tenaciously decreased the central rate, starting from September 2008, by 6, 25 percentage points, down from 10, 25%.

The most remarkable effect is that only in the first part of this process the central bank's signals for credit cost cutting have been immediately and sustainably incorporated by commercial banks within their offers for new lending in lei towards non-financial customers, but this process has since slowed down along with the ever lower marginal effects of reduction for the monetary rate into lending rates. A more comprehensive explanation for this effect should include the two-way influence of a plethora of other economic, social and political factors: the feeble, but determined recovery of business activity, resuming the increase in average income for the population, exchange rate stability and stable unemployment.

This research paper attempts to mainly incorporate some examples of analysis from the two aforementioned papers, and also from several others recently published. Because we have been unable to obtain data concerning directly the population's consumption, we have chosen instead to use a data set which captures it indirectly, which is the total lending towards the population for consumption, in lei. We consider that, usually, the destination of such a loan

reflects in a reasonable good measure the inclination towards consumption in Romania.

In a larger context, the monetary stability and the persistent disinflation process can aid significantly the credit worthiness of those in need of consumption or of housing loans. Therefore, although the Romanian financial sector lays within the influence of the regional, European and international deleveraging process, through the adjustment of banks' and investment companies' balance sheets, the local economy does hold better auspices for the sustained increase of both supply and demand of credit. These two elements are essential towards the advance for a more sustainable and vigorous economic growth. Still, the potential for lending towards the population remains and will stay at low levels – mostly for housing loans, and we estimate a stabilization for the consumption credit demand, due to the improvement in the public's perception towards economic growth, political and economic stability, a stable exchange rate and a sustained disinflationary process, all having serving as a cumulative favorable impulse for the financial standing.

Even though for 2013 we see an improvement in the outlook for both the consumers and the investors (recently, the Nuclearelectrica and Romgaz IPOs have significantly increased the appetite for the stock exchange risk, seen with the usage of credit lines for the IPO oversubscription anticipated by the investors), an end to the cycle of tough credit standards by the banks, a continuation of the BNR relaxed monetary policy cycle (in a concerted manner, alongside other important central banks), the dynamics of lending towards the private sector is, for now, neutral-towards-negative, due to the overall debt ratio of the population.

The effect is further compounded by the banks orientation towards financing non-financial entities and, to a lesser extent, the population.

The consumption, and the credit for consumption are both on a downward trend, but we expect a slight pick-up especially in the second part of next year, when strict fiscal deficit management measures will allow for opportunities of fiscal support (reduction of social contributions, VAT) and monetary support (reductions in minimum reserves and of the central interest rate) for the economy. Also, for the Romanian economy we see a low degree of availability for long term resources in national currency, influence which can be seen in the discount (returns, respectively) rates which are too high compared to the long tenors for real estate and construction loans. Therefore, on the supply side of the consumption credit, the main support comes from improved liquidity of the market, and this funds inflow has an effect on interbank rates, which have decreased due to intense competition among the credit institutions.

On the other side, Romania's economy still suffers from the banks' low risk appetite (and as a persistent effect of the stringent need for liquidity of the foreign main offices and Romanian branches), from the sustained deficit of direct foreign investment, but also from low rates of internal savings. While the (over)extension of consumption and housing loans was due to credit denominated in foreign currencies and for long periods of time, the precautionary savings are mostly consistent of lei, and for the short term. The debtor population has, as it turns out, an important exposure on foreign currency, but also one of maturity transformation, because in general the population's savings are done for the short term, while their obligations are for the long term. During economic boom times, even the credit for consumption purposes, backed by real estate collateral, was usually granted for long or very long periods, and the present effect of such excess is self-evident, especially through the high degree of default for loans in foreign currency compared to the ones granted in lei, especially for the consumption credit, but for the housing loans as well.

It is interesting to notice that, starting with the first half of 2012, when the signs of macroeconomic stability have started to become more obvious, the population turned from a net debtor into a net creditor of the banking system, an effect which should lead, in our opinion, to an improvement in the population's ability to honor the debt, due to an increase in savings, especially cautionary deposits.

Research character and sources of error

The main concern regarding the accuracy of the present research comes from the quality and quantity of the information available to us. In this case, most of the data sets concern the 2004-2012 intervals, which were recognized for atypical and important changes in all indicators of the national economy. We recognize that the not so large number of observations poses a possible cause for inadvertencies. Another source of errors could be our choice for the total consumption lending values for individuals, in lei, for which we have records with a monthly frequency, and not the quarterly new credit values.

Regarding the systemic risk (which is mainly represented by the potential for adverse shocks from the direction of the interest rate, the exchange rate and the economic growth), the lending for consumption and housing, for the long term, are the most sensitive in relation to an increase in the interest rate, especially for debtors with small incomes. For these, according to BNR[(1)], the debt ratio can be increased by as much as 10%, and so it will lead to an adverse change in the ability to repay the loans, especially the consumption type.

Moreover, people with small incomes, those with salaries below the national average, are more exposed to a potential unfavorable evolution of the labor market, less able to mitigate the effect of diminished capacity for repayment of

loans. The current trend of decrease in interest rates is perceived as most favorable, especially by the debtors with small incomes, and the disinflationary process, with the concurrent decrease in interest rates, can only help the repayment capacity.

For instance, the nominal wage has increased in November 2013 compared to the same month the previous year by 3, 5%, and with an average inflation of 2% we get a real increase of 1, 5%, which is a slight but important improvement for the financial standing of the consumer or the debtor, and a psychological support for dismissing the pessimism regarding the evolution of the real economy and the labor market. As for the support given through bank lending for the consumption and housing loans, the banks' lack of appetite can be justified by the deficit of real demand on behalf of the clients.

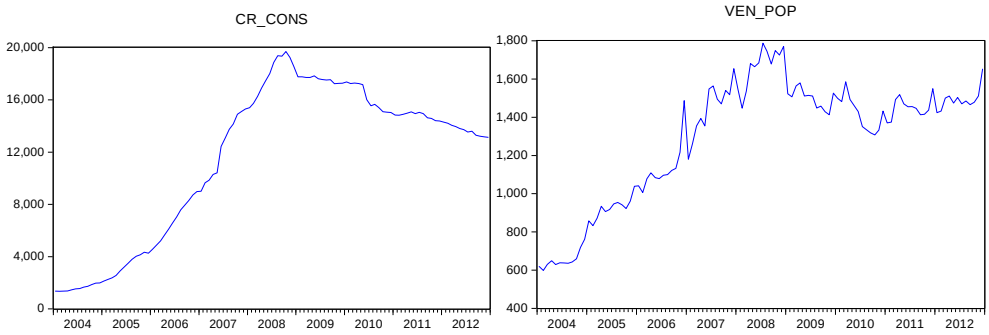
We will try to integrate in our comments the possible effect of the population's standing and their support for the investment and savings behavior, respectively over the propensity for new loans for consumption or real estate acquisition.

At present, the high degree of population debt, especially in foreign currency, is still the main vulnerability of the consumption an real estate sectors, due to the high levels reached and due to the structure of currency, time frame, credit type and income category. These influences can significantly affect a sector's ability to honor its debt, when faced with the pressures of economic and financial uncertainty.

From the beginning we have identified the correlation matrix between the evolution of consumption credit and population income in Romania. Afterwards, through the OLS method we put together the influence of the variable income over the population's debt for consumption in lei, this being the most adequate means for ascertaining consumption. In the end, by applying the model, we have identified the coefficients of the external variables.

Empirical results

The dependencies we have observed are shown as graphs and commented upon, case by case. All data sets represent the evolution of monthly consumption credit and the population's income for Romania, between 2004 and 2012.



Thousands lei Millions lei

Figure 2. *Graphical evolution of consumption credit vs. population income*

Although the two data sets are in different units (thousands and millions, respectively), the correlation of consumption credit and the population income is evident, although the latter has higher time variability. In the last years of economic and financial crisis, lending has taken a downturn, even though the income has picked-up starting with 2010 and up to now.

The decision to take on a loan for housing or real estate investment purposes, especially during economic boom times, before the crisis, influences in a great degree the population's financial standing and debtor behavior, both on the short and the long term. If before the crisis, the increases in value for the housing stock presented good collateral for a big consumption loan, now this is no longer possible, especially because the credit is still too expensive.

Therefore, 43% (approximately 4,3 million people) of Romania's active population has a standing loan with a bank or a non-financial institution, and has an average housing debt exposure for 22 years, and seven years respectively for consumption loans not collateralized by mortgages. Moreover, the high ratio of foreign currency debt is over two thirds, 95% for construction loans and consumption mortgage loans of about 90%. These ratios have supported the necessity to regulate the debt ceiling for a person, with the purpose of providing him or her with a constant ability to sustain the debt, throughout the entire personal economic cycle.

Central bank statistics show that the debtors who are unable to pay their debts to the banks have a debt ratio of over 4% in the case of consumption loans, and over 70% in the case of housing loans[(2)]. Consequentially, an acceptable level for the debt ceiling should be about 30% for the consumption loan (including credit cards, overdrafts, leasing and others) and approximately 50% for the housing loan. The descriptive statistics of the two data sets show a higher dispersal around the median, in the case of consumption loans (variance coefficient = 0, 5), related to the population income (the variance coefficient is 0, 25; half as large).

	CR_CONS	VEN_POP
Mean	11567.41	1297.345
Median	14099.87	1431.895
Std. Dev.	5941.139	321.5378
Coef. variation	0.51361	0.247843
Skewness	-0.558830	-0.801587
Kurtosis	1.804172	2.516993
Jarque-Bera	12.05625	12.61558
Probability	0.002410	0.001822

The Jarque - Bera statistics have low probabilities (0.24% and 0.18%) to indicate normal distribution sets. A first criterion of validation for the assumed correlation model (Consumption credit ~ Population income), regarding the normality of data distribution, is not confirmed. We will use the other criteria: stationarity of data evolution, elimination of residual autocorrelation.

The following correlation matrix indicates an evident intensity, as it was expected, for the link between the consumption loan evolution and the population income (correlation coefficient is 0.94, with a determination coefficient of $0.94^2 = 88\%$).

	CR_CONS	VEN_POP
CR_CONS	1.000000	0.944231
VEN_POP	0.944231	1.000000

The stationarity test verifies the probability of existence or non-existence of time variations for the median and the dispersion, variations which invalidate the correlation model.

In our analysis, both data sets have high probabilities (over 33% and 23, 74% respectively) for non-stationarity, which invalidates the possible model of correlation between the analyzed set in absolute figures.

The situation, for each variable:

Null Hypothesis: **CR_CONS** has a unit root
Exogenous: Constant
Lag Length: 2 (Auto - based on SIC, maxlag=12)

		t-Statistic	Prob.*
ADF test statistic		-1.901802	**0.3304**
Test critical values:	1% level	-3.493747	
	5% level	-2.889200	
	10% level	-2.581596	

Null Hypothesis: **VEN_POP** has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=12)

		t-Statistic	Prob.*
ADF test statistic		-2.119906	**0.2374**
Test critical values:	1% level	-3.493747	
	5% level	-2.889200	
	10% level	-2.581596	

Null Hypothesis: **D(CR_CONS)** has a unit root
Exogenous: Constant
Lag Length: 1 (Auto-based on SIC, maxlag=12)

		t-Statistic	Prob.*
ADF test statistic		-3.558860	**0.0083**
Test critical values:	1% level	-3.493747	
	5% level	-2.889200	
	10% level	-2.581596	

Null Hypothesis: **D(VEN_POP)** has a unit root
Exogenous: Constant
Lag Length: 1 (Auto - based on SIC, maxlag=12)

		t-Statistic	Prob.*
ADF test statistic		-10.30184	**0.0000**
Test critical values:	1% level	-3.493747	
	5% level	-2.889200	
	10% level	-2.581596	

After the first differentiation (D (CR_CONS and D (VEN_CONS) stationarity is eliminated. We have probabilities of 0% for non-stationarity, which encourages us to analyze the correlation between these variables, as in the tables above.

Analysis of the correlation between the evolution of consumption loans and population income

We set out to identify the most adequate statistical model for explaining the evolution of the consumption loans. At a first attempt, the explanation can be attributed to the evolution of monthly population income. Because the model is not validated statistically, we will attempt several explanatory models, based on the previous evolution of credit and income.

Model 1 of regression: CR_CONS = -11067.1 + 17.4468 × VEN_POP

Encouraged by the intensity of the correlation between loans and income, in the first model of regression we have analyzed the co-dependency between the absolute values of the two variables. We know that these absolute data sets have a non-stationary evolution and, consequentially, the regression model will not be validated.

Dependent Variable: **CR_CONS**
Method: Least Squares
Date: 08/25/13 Time: 20:50
Sample: 2004M01 2012M12
Included observations: 108

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**-11067.10**	789.6598	-14.01503	**0.0000**
VEN_POP	**17.44680**	0.590957	29.52294	**0.0000**

R-squared	0.891572	Mean dependent var	11567.41
Adjusted R-squared	**0.890549**	S.D. dependent var	5941.139
S.E. of regression	1965.532	Akaike info criterion	18.02326
Sum squared resid	4.10E+08	Schwarz criterion	18.07293
Log likelihood	-971.2560	Hannan-Quinn criter.	18.04340
F-statistic	871.6038	Durbin-Watson stat	**0.373285**
Prob(F-statistic)	**0.000000**		

The model presents a very good R^2 (89%) and a very good statistical significance (0% probability that the model has, in general but also for each variable, coefficients close to zero). Unfortunately, the Durbin-Watson statistic is very low compared to the ideal value of 2 (=0.37), which signifies the existence of residual autocorrelation for the model. This can be eliminated by the first differentiation.

Model 2 of regression: DCR_CONS = 92.335 + 1.832×DVEN_POP

In the second model of regression we use the differences between absolute values, which have been proven to be stationary.

Dependent Variable: **DCR_CONS**
Method: Least Squares
Date: 08/25/13 Time: 21:06
Sample (adjusted): 2004M02 2012M12
Included observations: 107 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	92.33517	33.06361	2.792653	**0.0062**
DVEN_POP	1.831996	0.446813	4.100137	**0.0001**

R-squared	0.138010	Mean dependent var	110.0225
Adjusted R-squared	**0.129800**	S.D. dependent var	363.5000
S.E. of regression	339.0891	Akaike info criterion	14.50892
Sum squared resid	12073052	Schwarz criterion	14.55888
Log likelihood	-774.2271	Hannan-Quinn criter.	14.52917
F-statistic	16.81112	Durbin-Watson stat	**0.923687**
Prob(F-statistic)	**0.000082**		

The adjusted R^2 for this model is, this time, very small (13%), which proves the fact there other variables exist which explain the evolution of the consumption loans.

The model has, again, a very good statistical significance (0% probability that the model has, in general, but also for each individual variable, coefficients close to zero).

The Durbin-Watson statistic is again inferior to the ideal value of 2 (=0.92), which signifies the existence of residual autocorrelation for the model. Consequently, we will insert a new independent variable, to better explain the evolution of monthly consumption loans.

Model 3 of regression: DCR_CONS = 40.33 + 1.5 × DVEN_POP + 0.5 × DCR_CONS (-1)

The third model of regression is improved by adding a second independent variable, formed by the previous differences between the monthly consumption loans (DCR_CONS (-1)):

Dependent Variable: **DCR_CONS**
Method: Least Squares
Date: 08/25/13 Time: 21:48
Sample (adjusted): 2004M03 2012M12
Included observations: 106 after adjustments

Variable	Coeff	Std. Error	t-Statistic	Prob.
C	**40.33204**	29.48679	1.367800	0.1744
DVEN_POP	**1.502824**	0.384511	3.908399	**0.0002**
DCR_CONS(-1)	**0.502009**	0.077968	6.438613	**0.0000**

R-squared	0.384936	Mean dependent var	111.1993
Adjusted R-squared	**0.372993**	S.D. dependent var	365.0220
S.E. of regression	289.0381	Akaike info criterion	14.19889
Sum squared resid	8604933.	Schwarz criterion	14.27427
Log likelihood	-749.5411	Hannan-Quinn criter.	14.22944
F-statistic	32.23117	Durbin-Watson stat	**2.224517**
Prob(F-statistic)	**0.000000**		

The third model is the one which best fulfills the validation conditions of the correlation between the consumption loans and the population income: adjusted R^2 of median value (over 37%), a very good statistical significance (0% probability that the model has, in general and also for each individual variable coefficients close to zero).

The Durbin-Watson statistic is close to the ideal value of 2 (=2.2), which signifies the quasi-inexistence of residual autocorrelation for the model.

The conclusion is that the monthly variance of consumption loans is justified in a significant proportion (over 37%) by the monthly evolution of population income, but also by the previous variation of the loans value.

Model 4 of regression: DCR_CONS = 41.6 + 1.3 × DVEN_POP + 0.56 × DCR_CONS (-1) - 0.735 × DVEN_POP (-1)

We set out to continue the analysis and to add, to the fourth model of regression, a third independent variable, consisting of the previous differences between the monthly population income values (DVEN_POP(-1)). Also, it is relevant that we

use the previous income figures (in absolute or differentiated values), because the intensity of the correlation between the variables we have studies (consumption loans and population income) recommends the income as an explanation for the evolution of the credit values.

Dependent Variable: DCR_CONS
Method: Least Squares
Date: 11/07/13 Time: 08:07
Sample (adjusted): 2004M03 2012M12
Included observations: 106 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	41.60917	29.23381	1.423324	0.1577
DVEN_POP	1.303868	0.398829	3.269241	**0.0015**
DCR_CONS(-1)	0.563796	0.085475	6.596054	**0.0000**
DVEN_POP(-1)	-0.735066	0.434629	-1.691250	**0.0938**

R-squared	**0.401714**	Mean dependent var	111.1993
Adjusted R-squared	**0.384117**	S.D. dependent var	365.0220
S.E. of regression	286.4627	Akaike info criterion	14.19010
Sum squared resid	8370212.	Schwarz criterion	14.29061
Log likelihood	-748.0753	Hannan-Quinn criter.	14.23084
F-statistic	22.82899	Durbin-Watson stat	**2.270058**
Prob(F-statistic)	**0.000000**		

The fourth model also satisfies the condition for the correlation validation between loans and income: the adjusted R2 has an average value (over 38%), a good or very good statistical significance (0% probability that the model has, in general or for each variable coefficients close to zero, with the exception of the newly used variable, which has a 90.62% probability of being significant (=100%-9.38%)). The Durbin-Watson statistic is relatively close to the ideal value of 2 (=2, 27), which signals the quasi-inexistence of residual autocorrelations for the model.

Model number 4 explains the fact that the monthly variation of consumption lending is determined, in a significant proportion (over 38%), by the monthly variation of population income, by the previous monthly variation of the consumption lending, but also by the variation in the month prior of the population income figure itself.

Both the number 3 and the number 4 models generate a good explanation for the evolution of consumption credit. These prediction must take into consideration the government's policy regarding population income (a policy which is to be rather stimulating during the next electoral years), gut also the credit policy of commercial banks (also stimulating, considering the BNR decision to cut the interest rate).

Conclusions

Even though the correlation between the evolution of consumption loans and the population income is evident (89%), the first model of regression, although valid by many criteria, suffers from the non-stationarity of data series and the existence of residual autocorrelation.

After again differentiating with a first order the variables analyzed, Model number 2 has stationary data series but loses a great deal of its explanatory power: the adjusted R^2 of only 13% signals that there are other factors which can explain the evolution of consumption lending, besides the population income. The Durbin-Watson statistic of only 0.92 indicates the presence of residual autocorrelation for the variables.

A better adjusted R^2 coefficient (37%) is obtained by Model number 3, which explains the monthly variation of credit values (DCR_CONS) by the monthly change in population income (DVEN_POP) and the previous variation in the lending itself (DCR_CONS(-1)).

The sensitivity coefficients of the identified factors are validated with a very good degree of significance (probability of 100% of statistical significance), and, overall, the model is also valid with a 100% probability of being significant. The Durbin-Watson statistic is almost optimal (at 2.2) and also confirms the quasi-inexistence of residual autocorrelation between the variables. The model, overall, meets most of the criteria for multiple regression equation validity.

In the case of the fourth model, the R^2 coefficient of determination has a significant value (38%), which explains the monthly variation of consumption lending (DCR_CONS) through the monthly change of population income (DVEN_POP), the change of previous lending (DCD_CONS(-1)) and the previous variation of the population income (DVEN_POP(-1)).

The correlation has an adjusted R2 of correlation in the average value (over 38%), a good and very good statistical significance (probability of over 90% for both the coefficients of the explanatory variables).

The influence of the macroeconomic context is shown in a limited way by the models we have presented. The corrective trend of the real estate values is, still, a main vulnerability for debtors and lenders alike, both for the consumption credit backed by mortgage and for the housing loan. We estimate that a certain favorable effect of wealth perception balances the risk of corrections, through the less negative dynamics of such assets' evaluation, due to smaller discount rates, which result as a lesser risk is perceived due to lower interest rates for the short and long term. The loans with the biggest non-performance (over 90 days late for payment) are those granted in the economic boom times of 2007 and 2008. Those

consumption loans and housing loans had a Loan-To-Value Ratio (LTV ratio) of over 90%.

As the most important systemic risk comes from denominating the credit in other currencies than the debtor's own income, the theme of global risks which are inherent to foreign currency lending is now in the sights of both central and commercial banks. For instance, banks are now required to clearly inform the debtors who are un-hedged against currency losses of the incurred risk of foreign currency lending, which can manifest themselves through the sudden depreciation of the national currency and is usually accompanied by an increase in interest rates for the said currency.

An alternative for such exposures should be offered by the lending using the national currency, or the acquisition of financial instruments for protection against foreign exchange rate risk. Therefore, regarding a loan which is not covered for exchange rate risk, this type of instrument can be accessed only by clients who present a significant good standing. This good standing is, in fact, the capacity to sustain adverse shocks in the areas of interest rate and foreign exchange rate, and therefore a relative immunity towards the malaise of the economic cycle, which can extend itself for the entire duration of the loan itself.

We will try to corroborate these factors in future research, in which we will analyze the evolution of housing and consumption credit in Romania, in order to identify the factors which present the evolution of the real estate market, the effect on the population wealth and the decisions for saving vs. investing they can adopt.

Notes

(1) See National Bank of Romania, Report on the financial stability 2012, pp. 131-132.
(2) See National Bank of Romania, Report on the financial stability 2012, p. 134.

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Exploring the determinants of the productivity of indian microfinance institutions

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Abstract. *This paper attempts to investigate the determinants of productivity in microfinance institutions (MFIs) in India using the empirical Bayesian technique. To do this, we utilize an unbalanced panel dataset covering the period 2005-2011 with 292 observations from 64 institutions. Based on theoretical grounds, three broad factors are specified: institutional characteristics, outreach, and efficiency. We find convincing evidence that institutional characteristics and outreach have both positive and negative effects on the productivity of MFIs, depending on the proxy used in the analysis. However, the efficiency of MFIs affects the productivity negatively. Specifically, we find that the age of the institution positively influences the productivity by 6.1581 points, while number of offices and number of personnel negatively affect it by 26.41% and 8.77%, respectively. Of the outreach variables, numbers of active borrowers positively influence productivity by 0.04%, whereas average loan size appears to have an inverse relationship with productivity. We further find that cost per loan – a proxy for efficiency, has a negative and statistically significant impact of 1.9604 points on the productivity of MFIs. Overall, our investigation suggests that there is a need to build client confidence and pursue innovative credit delivery techniques in reaching out to the poor and achieving high levels of productivity.*

Keywords: productivity; microfinance institutions; efficiency; outreach; empirical Bayesian estimation technique.

JEL Classification: D24.
REL Classification: 15E.

1. Introduction

Microfinance institutions (MFIs) are extending financial and social intermediation tailored to the poor (Ledgerwood, 1998). The main objectives of these institutions are to economically empower the poor masses, achieve the financial ability to alleviate poverty by involving them in income generating activities necessary to accumulate capital, and improve their living standards (Hulme, 1996). However, the business of providing tailored intermediation presents a lot of challenges that influence the productivity of these pro poor institutions. The poor in the developing countries have valueless collateral, scattered, and demand several small loans (Conning, 1999). This demands additional resources for these institutions to function particularly with regards to appraising, disbursing, monitoring, and recovering of loans from these poor clients hence compromising on performance (Hulme, 1996).

The performance of MFIs have been studied a lot in recent years, particularly efficiency (Hermes et al., 2011, Bassem, 2008, Berger, Humphrey, 1997), sustainability (Adongo, 2005, Twaha, 2011). However, only few authors including Gebremichael and Rani (2012) and Sufian (2007) have ventured into the productivity of these institutions. Thus, empirical evidence on what factors determine the productivity of MFIs is limited relatively. This study therefore aims to investigate the factors that are significant in explaining the productivity of MFIs. Specifically, this study examines the influence of institutional characteristics, outreach, and efficiency on the productivity of MFLs using the empirical Bayesian estimation technique. The study uses an unbalanced dataset covering the period 2005-2011 with 292 observations from 64 institutions operation in India.

We find that institutional characteristics and outreach have both positive and negative effects on the productivity of MFIs, depending on the proxy used in the empirical analysis. However, the efficiency of MFIs affects the productivity negatively. Specifically, the age of the institution positively influences the productivity by 6.1581 points, while number of offices and number of personnel negatively affect it by 26.41% and 8.77%, respectively. Of the outreach variables, numbers of active borrowers positively influence productivity by 0.04%, whereas average loan size appears to have an inverse relationship with productivity. The results also indicate that cost per loan – a proxy for efficiency, has a negative and statistically significant impact of 1.9604 points on the productivity of MFIs.

The organization of the rest of the paper is as follows. Next section briefly reviews the literature. Section 3 describes the methodology. Section 4 presents and discusses the findings. Section 5 provides some conclusions and policy implications.

2. Literature review

Productivity is one of the main engine driving firms. However, in microfinance industry, little attention has been paid by researchers to investigate this crucial factor. The existing empirical research has provided evidence that improvements in productivity lead to lower price levels (e.g., Rogers, 1998). Similarly, a relative expansion of financial institutions' output due to increased productivity causes a long-run real reduction in interest rates charged on loans. In what follows, we briefly review some prior empirical studies on the productivity of financial institutions.

Recently, Gebremichael and Rani (2012) investigated total factor productivity of Ethiopian MFIs employing the Malmquist productivity index method. They found that the main source of productivity growth is technical efficiency, particularly improvement in management practices. They also argued that further exploration of the determinants of productivity more especially in MFIs is essential notably regarding institutional and non-institutional factors such as scale and outreach. Andries (2011) analyzed the efficiency and productivity of Eastern Europe banks for the period 2004-2008 using the Malmquist productivity index method. He showed that technical changes improved productivity by 24.27% during the period of the study.

Kent (2009) examined the productivity growth of the nationwide banks of China and a sample of city commercial banks. The estimates of total factor productivity growth were constructed with appropriate confidence intervals using a bootstrap method for the Malmquist index. The productivity growth of the state-owned commercial banks (SOCBs) was compared with the joint-stock banks (JSCBs) and city commercial banks (CCBs). The results indicate that average total factor productivity for the joint-stock banks was better than that of the state-owned banks for some models of measurement but not others. However, on average, city commercial banks have improved their productivity growth both in terms of frontier shift and efficiency gain throughout the whole period. The study also showed that individual state-owned and joint stock banks have improved their productivity growth during the period under study and defined an improving production frontier. Most other banks lagged behind so that the gap between the inefficient banks and the most efficient banks widened. While individual banks have improved their productivity growth, there was no significant evidence that the average productivity growth of Chinese banks as a whole improved during the study period.

Sufian (2007) investigated productivity changes of the Malaysian non-commercial banking financial institutions during the post-merger period of 2001-2004 by applying the non-parametric Malmquist productivity index method. He used annual data from published balance sheets. The empirical findings suggest that these institutions have exhibited productivity regress during this period due to a decline in efficiency rather than technological regress. The results also suggest that the finance companies exhibited productivity growth due to technological progress, while the merchant banks, on the other hand, have experienced productivity decline during the sample period due to technological regress. The relationship between different non-commercial bank financial institutions' size and productivity indicates that the majority of these institutions which experienced productivity growth attributed to technological progress are the large ones, while the majority of them that experienced productivity decline due to technological regress were small ones.

Katerina (2006) evaluated the effectiveness of financial institutions in terms of productivity change of the ten latest members of the European Union (EU) for the period before their entry in the EU, 1996-2002. Katerina used the Data Envelopment Analysis (DEA) to calculate the Malmquist productivity index. Further, she decomposed the index into technological change and technical efficiency change index to determine the exact source of efficiency. In particular, she focused on exploring the relationship between the size of financial institutions and their productivity. She found that the total level of productivity had increased for half of the countries during the six-year period. However, she showed that the relationship between the size of banking institutions and productivity growth is not statistically significant, with the exception of Latvia, where this relationship appears positive and statistically significant.

The above review shows that there is relatively limited empirical evidence on studying the determinants of the productivity of MFIs. The few studies available suggest that advances in management practice are significantly related to the productivity of MFIs. Yet, almost all of the studies have applied the Malmquist productivity index method. Our study mainly differs from the existing empirical literature in two important aspects. First, we use a fairly larger dataset for 64 institutions, covering the period from 2005 to 2011. Second, we use different econometric methodology, namely empirical Bayesian technique.

3. Data and methodology

Understanding what determines the productivity of MFIs is limited due to a lack of empirical analysis in microfinance literature. Some prior empirical studies have examined the determinants of productivity in MFIs (e.g., Gebremichael, Rani, 2012, Sufian, 2007). However, as we mentioned above, these studies employed a non-parametric measure method, namely the Malmquist productivity index. Our study diverts from the previous studies methodologically by applying empirical Bayesian estimation method for exploring the significant derivers of the productivity of MFIs.

3.1. Data nature, sources, sample size, and limitations

Data for this study consist of institutional and financial information over the six-year period from 2005 to 2011 for sixty-four Indian MFIs. We obtain the data from the MIX Market. To respond to the objectives of the study, purposeful sampling method has been used to select the sample units of MFIs under our scope thereby constructing unbalanced panel dataset.

Although the dataset we used in this study covers a large sample of MFIs, the construction of the dataset, however, was limited by two factors. First, relatively few MFIs submitted their information to the mix market. Second, of those institutions that did, fewer submitted data continuously. Because of these limitations, it was difficult to obtain a balanced panel data. Therefore, we left out many MFIs lacking the required data.

Table 1 provides descriptive statistics for each of the variable included in the analysis. The sample consists of 292 bank-year observations. The average age of the institutions included in the study is about 11 years, ranging from minimum 2 years to maximum 38 years. The mean value of cost per loan is 20.92. The maximum value of cost per loan is 246.58, while the minimum cost per loan is only 1.01. The mean value of number of personnel is 1320.51, while the standard deviation of number of personnel is 2736.2. The mean value of number of office is about 162.58, ranging from 1 to 2380 offices.

Table 1. *Descriptive statistics*

	AGE	PESO	OFF	NAB	ALS	CPL
Mean	11.14	1320.51	162.58	371361.80	156.13	20.92
Median	10	353	48	85118.5	132.47	13.75
Maximum	38	22733	2380	6242266	832.93	246.58
Minimum	2	15	1	1125	61.25	1.01
Std. Dev.	6.74	2736.2	339.28	828436.60	99.09	27.21
Obs.	292	292	292	292	292	292

Note: AGE = age in years, PESO = number of personnel, OFF = number of office, NAB = number of active borrowers, ALS = average loan size, CPL = cost per loan.

3.2. Research model, specification, conceptualization, description, and design

3.2.1. Research model

Academic inquiries into the productivity of financial institutions have traditionally been carried out using the Malmquist productivity index method (e.g., Gebremichael, Rani, 2012, Sufian, 2007). However, this study is differing from the existing studies on this issue as it applies the empirical Bayesian estimation technique.

3.2.2. Rational of empirical Bayesian estimation techniques

Berger (1985) outlined a number of benefits associated with this estimation technique: a) The estimated parameters are random with some prior density, and thus, suitable for panel data where parameters of models are individual to one another. b) They provide a natural way of combining prior beliefs and information with data. In the panel data models, the average of individual parameter estimates can be used as prior.(1) c) They are more precise than the classical Bayesian estimates. The standard errors of Bayesian estimates are small, and hence, helpful in getting more reliable inferences. e) These methods provide reliable results for small samples. Contrary to classical Bayesian estimates, empirical Bayesian estimates do not rely on one asymptotic result. Finally, Hsiao (1999) and Koop (1999) highly recommend empirical Bayesian techniques in estimating panel data.

3.2.3. Research model specification

In order to empirically scrutinize the factors that are significant in influencing the productivity of MFIs operating in Indian, we model the productivity as follows:

Efficiency of MFIs = F (Institutional Characteristics, Outreach, and Efficiency)

Specifically, the model can be expressed as follows:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_{it} \quad (1)$$

where

Y_{it} = productivity;

X_{1it} = institutional characteristics;

X_{2it} = outreach;

X_{3it} = efficiency;

ε_{it} = error term.

3.3.4. Model conceptualizations

Productivity of a firm explores the relationship between factor input and output in production expressed as a ratio of output to input. It is the ratio of outputs to inputs (Ledgerwood, 1998). For MFIs, to achieve higher levels of productivity in operations, there is a need for employing fewer inputs (such as staff) or providing more output (such as loans) for the same quantity of inputs (staff) (Ledgerwood, 1998). Thus, as argued by Rogers (1998), increasing productivity requires either producing more output with the same amount of inputs or that fewer inputs are required to produce the same level of output. Therefore, it is clear that high productivity levels are achieved when maximum output is obtained for a particular input level. Productivity growth over time requires reducing costs (Rogers, 1998). Consequently, if the productivity growth of a firm is higher than that of its competitors, that firm performs better financially.

3.4. Dependent variables

In this study, we use numbers of borrowers per staff number as a measure of productivity. This ratio is computed by expressing the total number of borrowers in terms of total number of staff members in a given MFI. It is a staff productivity ratio. It provides a clue of the number of staff required to produce a given level of output measured by borrowers. A higher ratio is more desirable as it implies that fewer staffs are actually needed to produce a given number of borrowers. It is the appropriate measure of productivity given the fact that MFIs are characterized by a large number of borrowers accessing very many small loans (Hulme, 1996). This characteristic renders injection of more resources in the course of serving the poor masses, and thus, compromising on the productivity. Additionally, these pro poor institutions have evolved a unique loan delivery methodology including group lending, which reinforces the usefulness of this variable as compared to other alternatives such as loans per staff.

3.5. Independent variables

3.5.1. Institutional characteristics

Age (AG)

The total number of years an MFI has been in operation (i.e., experience) is used as a proxy for the age of the institution. The more years an MFI is in business, the more it understands its clients, especially those with the ability and willingness to pay, other things being equal. Therefore, the age of an institution is expected to have a positive relationship with the productivity of the institution.

Offices (OFF)

The total number of offices (branches) implies a (an) firm (institution) expansion. As firms expand, pressure is exerted on the productivity of firms. Particularly, for MFIs with clients scattered in remote rural areas, the situation becomes more challenging. This variable is therefore hypothesized to have an inverse relationship with the productivity.

Personnel (PESO)

The total number of personnel captures the notion that productivity is enhanced to the extent at which the MFI recruits the right size of inputs (staff) to produce outputs (loans). A lower number as compared to the number of loans is desirable. However, given the nature of microfinance operation, it demands a lot of staff to handle the numerous small loans from very many poor clients. This variable is therefore hypothesized to have an inverse relationship with the productivity of MFIs.

3.5.2. Outreach

3.5.2.1. Breadth of outreach

Number of active borrowers (NAB)

The number of active borrowers is an indicator of the breadth of outreach. The breadth has an inverse relationship with costs and a positive relationship with profitability, the argument being that fixed costs of production are amortized across a larger number and value of outputs. In this context, it is hypothesized that the number of active borrowers is positively related to the productivity.

3.5.2.2. Depth of outreach

Average loan size (ALS)

The average loan balance per borrower is a measure of depth of outreach. Numerous smaller loans by poor clients indicate greater depth of outreach, which requires more resources from the institution. Thus, we expect that the average loan balance per borrower should have an inverse relationship with the productivity of MFIs.

3.5.3. Efficiency

Cost per loan (CPL)

The cost per loan ratio measures the total financial value and other in-kind inputs required to produce a given level of output, as measured by loans. A higher ratio indicates that more financial resources and in-kind contributions are required to

produce a given number of loans. The cost per loan ratio is therefore hypothesized to be inversely associated with the productivity.

3.6. Model design

The empirical Bayesian estimates are weighted average of classical Bayesian estimates and the prior information. Let $\hat{\beta}$ be the classical bayesian estimate of parameters, which can be estimated as

$$\hat{\beta} = (X' X)^{-1} X' Y$$

Assume $\hat{\beta} \sim N(\mu, \Omega)$, this means $\hat{\beta}$ is itself random normal with prior mean μ and prior variance Ω. In this case, empirical Bayesian estimates will be:

$$\hat{\beta}_{BAYES} = E(\beta / \hat{\beta}),$$

where

$$\hat{\beta}_{BAYES} = E(\beta / \hat{\beta}) = [\frac{1}{\sigma^2}(X'X) + \Omega^{-1}]^{-1} [\sigma^2 (X' X)^{-1} \hat{\beta} + \Omega\mu] \quad (2)$$

$$V(\hat{\beta}_{BAYES}) = (\frac{1}{\sigma^2} X' X + \Omega^{-1})^{-1} \quad (3)$$

The empirical Bayesian estimation procedure used in the study by utilizing Bayesian equations (2) and (3). $\hat{\beta}$ is estimated in the following way $\hat{\beta} = (X' X)^{-1} X' Y$, where X is a matrix of the regressors and Y is the matrix of the dependent variable.

The estimation follows the assumption that the productivity of MFIs in India is random with some average performance and this enables estimation of parameters by using productivity determinants for a given MFI. In estimating priors, the average values of a MFI's variables are most ideal and can be arrived at in the following manner; $\bar{Y}i = \frac{1}{Ni} \Sigma Yit$ and $\bar{X}i = \frac{1}{Ni} \Sigma Xit$, where "$i$" is the ith firm, 'Ni' is the number of data points available for ith and t is the time index.

$$\bar{Y} = \begin{pmatrix} \bar{Y}1 \\ \bar{Y}2 \\ : \\ \bar{Y}n \end{pmatrix} \text{ and } \bar{X} = \begin{pmatrix} \bar{X}1 \\ \bar{X}2 \\ : \\ \bar{X}n \end{pmatrix}$$

Then, $\mu = \left(\bar{X}'\bar{X}\right)^{-1} \bar{X}'\bar{Y}$ and $\Omega = \bar{\sigma}^2 (\bar{X}'\bar{X})^{-1}$ are the priors used in the model. With both the posterior and prior parameters available, the empirical Bayesian estimates are described by Equation (1).

4. Empirical results

Table 2 reports our regression results for numbers of borrows per staff. Specifically, the table presents the estimated coefficient, t-statistics, and p-values. The table also reports the value of Adjusted-R^2 and F test. Heteroskedasticity-consistent standard errors are used in the estimation of t-statistics. All the variables included in the model have expected signs and appear to have statistically significant effects on the productivity of MFIs. The estimated value of F-statistic suggests that the overall model is good fit. Below we discuss the results in details.

4.1. Institutional characteristics

The estimated coefficients for all three proxied used for institutional characteristics, namely the age of the institution, number of offices (branches), and personnel, have expected signs and are statistically significant. Specifically, institutional *Age* is positively and statistically significantly related to borrowers per staff. The size of the estimated coefficient is 6.1581, which implies that for any additional year of existence of an MFI, its productivity improves by 6.1581 units per year. This finding is consistent with the idea that experience is important in dealing with the poor clients as it provides chance for lenders and borrowers to understand each other and serve each other more efficiently. Client loyalty as a result of years of dealings would definitely help in reducing the negative impacts of other institutional characteristics like office and personnel.

Table 2. *Results for model of borrowers per staff*

Variables	Coefficient	t-statistic	p-value
Const	325.8122	10.8159	0.000
AGE	6.1581	3.1179	0.002
OFF	-0.2641	-2.2631	0.024
PESO	-0.0877	-5.6368	0.000
NAB	0.0004	5.5169	0.000
ALS	-0.3437	-2.4709	0.013
CPL	-1.9604	-3.9254	0.000
Adjusted-R^2	0.1824		
F-statistic		9.0822	0.000

Note: Const = constant, AGE = age in years, PESO = number of personnel, OFF = number of office, NAB = number of active borrowers, ALS = average loan size, CPL = cost per loan.

The coefficient of number of offices is negative (-0.2641) and appears statistically significant. This implies that the productivity of an MFI decreases by 26.41% when the institution opens an additional office. A possible explanation for this finding is that MFIs use a lot of resources, both financial and human, to service the many clients in need of very small loans with higher unit costs. As more offices imply increasing resources to serve clients demanding credits, opening new office is likely to increase cost, and, thereby, compromising productivity.

Total number of personnel has also a negative and statistically significant effect on the productivity of MFIs. Specifically, the estimated coefficient for number of personnel indicates that the productivity of MFIs decreases by 8.77% when additional personnel are placed. Personnel are paid for their efforts by MFIs. Thus, the more personnel, the more resources depleted in the process of operation, and, hence, a compromise on the productivity.

4.2. Outreach

Outreach had two variables as earlier discussed representing breadth and depth of outreach. The total number of active borrowers (proxy of breadth) has a coefficient 0.0004, suggesting that an additional client increases the productivity of MFIs at a rate of 0.04%. This could have been possible due to partly perfection in the business as time went by as noticed while discussing age factor and possibly the diversification of clients including the rich and middle classes who have sound business knowledge.

The average loan size (proxy for depth) has a coefficient -0.3437. This suggests that extending loans to the poorest segment reduces the productivity of MFIs by 34.37%. This result suggests that the poorest are being served and serving the poorest requires more inputs, which adversely affects the productivity of MFIs.

4.3. Efficiency

Efficiency proxied by the cost per loan has a negative and statistically significant impact of the productivity of MFIs. Specifically, the estimated coefficient for the cost per loan suggests that the numerous loans offered to borrowers reduces productivity as measured by borrowers per staff by 1.9604 points. The negative influence of the efficiency of MFIs makes sense as the demand of numerous small loans by many borrowers renders cost per loan to be high thereby retarding productivity.

To check the robustness of our results discussed above, we run another model where we used loans per staff as a dependent variable instead of borrowers per staff. However, the explanatory variables are identical to the model presented in Table 2. The results are presented in Table 3. Overall, the results obtained from the model of loans per staff are quite similar, both in terms of their signs and

statistically significance, to our earlier results presented in Table 2. Specifically, the results suggest that the age of an MFI is positively and statistically significantly related to numbers of loans per staff, implying that the older MFIs have higher the ratio of loans to their staff than the young ones. On the other hand, we observe that there is a negative relationship between the numbers of office and loans per staff. Similarly, the average loan size and cost per loans are also negatively and statistically significantly related to loans per staff. In sum, the results presented in Table 3 strongly support our earlier results. This implies that the empirical evidence concerning the determinants of the productivity of microfinance institutions we presented here is robust to different proxies for the productivity of MFIs.

Table 3. *Results form model of loans per staff*

Variables	Coefficient	t-statistic	p-value
Const	337.0396	10.8646	0.000
AGE	6.4454	3.1689	0.002
OFF	-0.2473	-2.0512	0.040
PESO	-0.1002	-6.2448	0.000
NAB	0.0005	5.9847	0.000
ALS	-0.3296	-2.2993	0.021
CPL	-2.1172	-4.1108	0.000
Adjusted-R^2	0.2039		
F-statistic		10.4305	0.000

Note: Const = constant, AGE = age in years, PESO = number of personnel, OFF = number of office, NAB = number of active borrowers, ALS = average loan size, CPL = cost per loan.

5. Conclusions and policy implications

This study performed an empirical analysis of the determinants of productivity for 64 MFIs operating in India during the period 2006-2011. Specifically, the study investigates the roles of institutional characteristics, outreach, and efficiency in determining the productivity of MFIs. Our results indicate that both institutional characteristics and outreach have both positive and negative effects on the productivity of MFIs, depending on the proxy used for them. Specifically, we find that the age of MFIs is positively related with the productivity of MFIs, while both the number of offices and the number of personnel have a negative impact on the productivity. Concerning outreach, we find that total number of borrowers, which is used as a proxy for the breath of outreach, is significantly negatively related to the productivity of MFIs. However, the average loan size, which is used as a proxy for the depth of outreach, has a positive and statistically significant on the productivity of MFIs. Finally, our analysis suggests that the efficiency of MFIs proxied by cost per loan has a positive effect on the productivity of MFIs.

Overall, our results suggest that there should be massive mobilization of clients to boost the number of active borrowers. To avoid mission drift, MFIs should extend credit to the poor and find ways of training the poorest of the poor who have no experience in managing financial resources. Basic education should be extended to them at a minimum fee for them to be eligible for funding and to use it productively. This with time will help in reducing the negative impact of average loan size on the productivity of MFIs.

Our analysis also indicates that efficiency is a challenge to the productivity of MFIs. This is true. Since the small numerous clients demanding numerous small credits, the adverse selection and moral hazards are very likely to be involved in micro financing. Efforts should be done to ensure reductions in costs to reduce the cost per loan or per borrower. MFIs should encourage group lending, which has been empirically tested as enhancing efficiency.

Note

(1) Suppose $\widehat{\beta}_i$ is a parameter estimates for the *ith* cross section and let μ and Ω be the parameters of prior distribution then $\mu = \frac{1}{n}\sum \widehat{\beta}_i$ and $\widehat{\Omega} = \frac{1}{n}\sum \widehat{\beta}_i \widehat{\beta}'_i$.

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Fair value hedging, between opportunity and necessity

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Abstract. *In the actual worldwide context the exposure of companies to various financial risks increased and the consequences are much worst than 10 years ago. That's why hedging accounting has become a necessity. Derivative operations can be used to hedge: interest rate risks, foreign currency exchange rate risks, credit risks. Derivatives used to hedge these risks can be handled to cover fair value exposure, cash flow exposure and exposure to changes in the value of a net investment in a foreign operation.*
This paper proposes two models for fair value risk hedging using derivatives. Both examples are based on IAS 39, some of the most controversial accounting standards of the day. The proposed solutions can be used by the experts interested in applying hedging accounting in order to manage this particular type of risk and to limit the negative consequences of companies' performances.

Keywords: hedge accounting; hedge effectiveness; fair value exposure; cash flow exposure; fair value hedge.

JEL Classification: M41.
REL Classification: 11C.

1. Introduction

As the use of derivatives increased on a global scale, the appearance of new accounting standards was necessary. This is why IAS 32 and 39 were issued: to provide a comprehensive list of all disclosures and presentation issues that are relate to financial instruments. Although they were issued as separate standards, they are applied in practice as a unit because they deal with the same accounting phenomenon.

2. Requirements for hedge accounting

The introduction of fair value as an evaluation method for financial assets has increased since the introduction of IAS 39 and thus, has generated a series of problems. The ones directly facing these problems are the companies that chose to use derivatives, weather for hedging or speculative purposes. When it comes to recording derivatives in financial reports, the most important issue is the treatment of the gains or losses resulting from the adjustment of the derivative's carrying value to fair value.

The main reason for hedging accounting is to protect the profit against losses generated by fluctuations of: prices, currency exchange rates and interest rates. Gains and losses on the derivative used for hedging should be in the opposite direction from and of similar magnitude to the gain or loss on the hedged item.

When using hedge accounting, three conditions must be met simultaneously:
- the nature of the hedge risk;
- the hedge effectiveness;
- the documentation.

The derivatives appearance was generated by the discovery of new ways to limit and manage current activity risks. Of course, derivatives couldn't hedge any type of risk. Derivative operations can be used to hedge the following risks: interest rate risks, foreign currency exchange rate risks, credit risks.

Derivatives used to hedge these risks can be handled to cover three types of risk exposures:

Fair value exposure: A fair value risk exists if fair value can change either for a recognized asset or liability, or for an unrecognized firm commitment. To qualify for hedge accounting, the fair value risk must have the potential to affect reported earnings if it is not hedged.

Cash flow exposure: A cash flow risk exists if amounts of future cash flows that could affect earnings can change. The future cash flow at risk can be a contractual

cash flow related to an existing asset or liability, or it can be a forecasted cash flow from a transaction that is expected to occur but is not yet subject to a contract.

Exposure to changes in the value of a net investment in a foreign operation: This type of risk relates to changes in the value of an investment in a foreign subsidiary or in a foreign company accounted for by the equity method. Such changes in value can occur when exchange rates increase or decrease.

In any case it is very important to calculate the value of the exposure and the potential to affect reported earnings. If the changes of the assets and liabilities value are recognized immediately in earnings, they do not qualify for hedge accounting. Matching the recognition of gains and losses occurs without any need for special accounting. For hedge accounting to be used, a company must expect that the hedge will be highly effective in offsetting changes in the value of the hedged item or changes in cash flows related to the hedged item.

In order to apply hedge accounting, you have to take into consideration the following:
Step 1 – choosing the derivative instrument has to generate gains and losses that offset losses and gains on the hedged item.
Step 2 – selecting a method to measure the portion of the change in value of the derivatives and evaluate hedge effectiveness (at the beginning, and while the hedge is active).

Measuring offsetting changes in the derivative's value effectiveness tests can be based on changes in the value of the entire hedged instrument or can exclude changes in the value related to passage of time. For example, futures and forward prices can be viewed as the total of the current spot price plus a forward discount or premium. The change in forward discount or premium is unrelated to any changes in an item where futures are used to hedge, so a valid approach is to exclude the changes in discount or premium from the measurement of hedge effectiveness. In this case, hedge effectiveness would be evaluated by comparing changes in the spot rate component of futures prices to changes in the value of the hedged item. Similarly, the entire premium on an out-of-the-money call option represents the time value related to the possible gains should the option end up in the money. As the time to expiration draws closer, this time value gradually decreases. The changes in the time value component of the option is unrelated to any changes in an item that the option is used to hedge, so a valid approach is to exclude the changes in time value from the measurement of hedge effectiveness.

Hedge effectiveness would be evaluated by comparing changes in the intrinsic value of the option to changes in the value of the hedged item.

3. Hedge accounting for fair value hedges

IAS 39 defines the fair value hedge as a hedge of "the exposure to changes in fair value of a recognized asset or liability". If a fair value hedge is effective, it creates a risk exposure in the opposite direction from the risk exposure of the hedged item.

Hedge accounting applies to recognized assets and liabilities, but also for unrecognized firm commitments. An unrecognized firm commitment is a contractual obligation that is not yet reflected on the balance sheet, but in the future it will become an asset or a liability once it will appear in the balance sheet. The firm commitment must be for a fixed quantity, price, and date and has to be binding both parties (costumer and supplier). In order to use hedge accounting to cover fair value risk, the hedge item must be a single asset, liability, or commitment or a group of assets, liabilities, or commitments whose values change together.

All changes that occur in the process of hedging will be reported in current earnings, the carrying value of the derivative is adjusted to fair value on the balance sheet, and the change in that carrying value from period to period is included on the income statement. At the same time, the balance sheet carrying value of the hedged item is also adjusted so that unrealized gains and losses due to the hedged risk offset the gains and losses on the derivative.

3.1. Example for fair value hedge of exposed asset

In October N a refinery who's processing crude oil from import has an inventory of 80,000 barrels (12,720,000 l) at 72 $/barrel, 1$ =3 lei. The company anticipates that the crude oil will be used in producing products that will ultimately be sold in June N+1.

Because on the market cruel oil's price registered an increase the company decides buying futures contracts (short position) on the American market (CME - Chicago Mercantile Exchange) in order to hedge the value of its crude oil. The company buys 10 June futures contracts at a price of 85.09 $ per barrel. CME requires a margin deposit for 800 $ per contract (each contract refers 1000 barrels)

Hedging designation

The refinery designates the futures contracts as a fair value hedge of the change in the value of the crude oil inventory due to changes in spot prices. It is a fair value hedge because the company is hedging the value of an existing asset. It might seem strange that the company is hedging the value of the inventory it already owns since the company has already spent the money to purchase that inventory, and the amount cannot increase. The company has a continuing need for oil in its

production, however, and future purchases of oil would be at higher prices if the price of crude oil rises. Although the company designates the existing inventory as the hedged item, it is really hedging the cost of replacing that inventory once it has been used up.

Expected hedge effectiveness

If the value of crude oil drops, the company's inventory of it decreases in value, but it expects to make an offsetting profit on the short position in crude oil futures. It might seem that this hedge would be highly effective based on the critical terms of the derivative.

Subsequent price behavior the spot prices and futures prices subsequently change as follows:

Months	CME	Spot cruel oil per barrel ($)	Futures cruel oil per barrel ($)
Nov	15	80.00	79.65
Dec	31	84.15	83.75
Jun	15	85.49	85.09

Accounting treatment

Since all of the conditions for hedge accounting were met, the refinery accounts for the futures contracts as a hedge of the fair value of its cruel oil inventory. The carrying value of the inventory is adjusted by the amount of effective hedging, and changes in the futures position not attributable to effective hedging are recognized in earnings. Because CME (like all futures exchanges) requires daily settlement of futures positions, the changes in value are realized through cash payments to or from the exchange, and the open futures position always has a fair value of zero. Required journal entries at each date are as follows:

* November 15 – to record the margin deposit 800$/contract (800 $ x 10 contracts x 3 lei/$)

Commodities accounts	=	Bank account	24,000 lei

* December 31 – payment to CME in order to cover losses:

1,000 barrels x (79.65 – 83.75) x 3 lei/$ per contract

Commodities accounts	=	Bank account	123,000 lei

– to record losses on futures positions

Profit & Loss account	=	Commodities accounts	123,000 lei

– to adjust the carrying amount of cruel oil for changes on spot price:

80,000 barrels x (84.15 – 80.00) x 3 lei/$ per contract.

Cruel oil inventory	=	Profit & Loss account	996,000 lei

* June 15 – payment to CME in order to cover losses:
1,000 barrels x (85.09 – 83.75) x 3 lei/$ per contract

Commodities accounts	=	Bank account	40,200 lei

– to record losses on futures positions

Profit & Loss account	=	Commodities accounts	40,200 lei

– to adjust the carrying amount of cruel oil for changes on spot price:
80,000 barrels x (85.49 – 84.15) x 3 lei/$ per contract

Cruel oil inventory	=	Profit & Loss account	321,600 lei

– to record the return of the margin deposit

Bank account	=	Commodities accounts	24,000 lei

3.2. Fair value hedge of a firm commitment

On October 1, N, the refinery enters into a fixed-price contract to sell 10,000 barrels of gasoline at $125 per barrel in December N. This is a firm commitment that exposes the company to risk because the cost of the cruel oil used to make the wire could increase, reducing the company's profit on the contract. The company decides to hedge this risk by taking a long position in cruel oil futures. The company buys 10 December CME futures contracts at a price of $90,42 per barrel. The refinery has to pay a margin deposit of $400 per contract.

Hedging designation

The refinery will use the futures contracts as a fair value hedge of the firm commitment to sell its finish product: gasoline.

If the company intends to purchase additional cruel oil to make the wire, the futures could instead be designated as a cash flow hedge.

Based on an analysis of gasoline and cruel oil futures prices, the company concludes that cruel oil futures should provide a highly effective hedge of cruel oil sales prices.

Subsequent price behavior the spot prices and futures prices subsequently change as the following table indicates:

Months	CME	Spot crul oil per barrel ($)	Futures per barrel ($)	Gas spot per barrel ($)
Oct	1	86.27	86.61	125
Nov	30	88.71	89.07	127
Dec	31	90.42	90.42	129

Accounting treatment

Since all of the conditions for hedge accounting were met, the refinery records in its accounting the futures contracts as a hedge of the fair value for this firm commitment to sell gasoline. The commitment is recorded on the balance sheet at the amount of the effective hedging, and changes in the futures position not attributable to effective hedging are recognized in earnings.

The daily settlement of futures positions is realized through cash payments to or from the CME, and the open futures position always has a fair value of zero. When the hedged transaction finally occurs, the balance in the commitment account adjusts the recorded amount of the hedged transaction. See the following:

* October 1– to record the margin deposit 400$/contract (400 $ x 10 contracts x 3 lei/$)

Commodities accounts	=	Bank account	12,000 lei

* November 30 - to record gains on futures positions
1,000 barrels x (89.07 – 89.61) x 3 lei/$ per contract

Commodities accounts	=	Profit & Loss account	73,800 lei

- to record firm commitment to sell 10,000 barrels x (129 – 125) x 3 lei/$:

Profit & Loss account	=	Firm commitment	60,000 lei

* December 31- to record gains on futures positions 1,000 barrels x (90.42 – 89.07) x 3 lei/$ per contract

Commodities Accounts	=	Profit & Loss Account	40,500 lei

- to record firm commitment to sell:
10,000 barrels x (129 – 127) x 3 lei/$

Profit & Loss account	=	Firm commitment	60,000 lei

- to record withdrawal of gains and the margin deposit
73,800 + 40,500 + 12,000 = 136,300 lei

Bank account	=	Commodities accounts	136,300 lei

- to record sale of 10,000 barrels of gasoline at $125 per barrel

Accounts receivable	=	Sales revenues	1,250,000 lei

- to reverse firm commitment balance and adjust recorded revenues

Firm commitment	=	Sales revenues	120,000 lei

4. Conclusions

Hedge accounting applies to recognized assets and liabilities, but also for unrecognized firm commitments

In absence of hedging the firm sales commitment would not be recorded on the balance sheet.

All derivatives are to be shown at faire value on the balance sheet as either assets or liabilities, depending on the specifics of the contract

The accounting for change in fair value of a derivative depends on whether the derivative has been designated as part of an effective hedging relationship.

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The VAT encashment system's impact on return on invested capitals. Romania's case

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Abstract. *The modifications related to the fiscal regulations in Romania that refer to the VAT encashment system are considered as a fiscal relief for companies. Our purpose is to analyze the way in which the VAT encashment system becomes efficient and companies can benefit from the advantages offered by it. Taking into account the variety of domains in which companies enjoying this relief are activating, we are analyzing the impact that this particular VAT system can have on multiple industries and we aim at proving that the VAT encashment system cannot be always regarded as a fiscal relief policy. There are cases in which this particular measure to stimulate economic growth does not achieve its designated target. Throughout the paper we will simulate the implications on different industries, based on the organizational performances, we will emphasizes the favored domains of economic activities as well as those for which the VAT encashment system can produce negative externalities.*

Keywords: VAT encashment system; return; invested capitals; economic re-launch; audit.

JEL Classification: M41, M42, H21.
REL Classification: 14I.

Introduction

Many of the member states of the European Community adopted various austerity measures or measures for economic re-launch so far. The austerity measures applied have an impact on the targeted budgetary deficit so that states might not enter incapacity of payment or to avoid accessing loans in order to perform on short-term payments. In our opinion, the austerity measures need to be justified, meanwhile the resource reserves generated need to be used in order to trigger measures for economic re-launch.

The VAT encashment system can be regarded as a measure for economic re-launch. Still, it is only natural to ask ourselves with regard to the utility and advantages offered by such a VAT system. By applying the new VAT encashment system the desired outcome is an economic re-launch by enhancing investments, minimizing unemployment as well as increasing economic competitiveness in Romania to further attract foreign direct investments.

Also, another target is to create a fiscal environment that might support the performance of SMEs, which are going through tribulations from a financial point of view, given the absence of liquidities. The VAT encashment system has as objective to increase the speed of currency circulation within an economy to which a more efficient collection of value added taxes is added. In this sense, the system is based on the idea of VAT paid at the cashing of invoices. Nevertheless, the legislation concerning the VAT, in its current form, applicable since 2013, can raise a question mark on the utility of measures applied and even on the attainment of objectives established through the fundamenting note of modifications in the fiscal code, by which the VAT encashment systems is being introduced.

There are other states applying the VAT encashment system and in which this system has proven to work coherently. Romania should analyse carefully the particularities that the VAT encashment system proposes, as it will introduce it starting with the following year, so that the state might not enter conflict with the European legislation and to avoid the opening of infringement procedure for not complying with the obligations assumed based on the 2006/112/CE Directive.

Literature review

In terms of VAT legislation, the European Commission present what the value added tax represents and its function. By this we can identify the neutral character of VAT, indifferent of the number of transactions recorded. By VAT neutrality we

understand that this tax is to be included in the VAT collection-deduction mechanism for transaction withing taxable legal persons that have registered for VAT purposes (European Commission, 2012). Moreover, based on the same documentation, we observe that the VAT is a tax on consumption that is beard by the final end user. Therefore the bearer of the tax is the end-user, while the tax is collected by the state though chargeable legal persons registered for VAT purposes, who act as tax-collectors, in this case, as VAT is an indirect tax. By analyzing the literature available in this domain, we can notice that there are some series of generally applicable principles regarding VAT: the equivalence and effectiveness principle, the reliability principle, the principle of interdiction of breach of trust, the principle of fiscal neutrality (Terra, Kajus, 2006). The principle of fiscal neutrality is mentioned even from the first European directive concerning VAT as it regulates that VAT is a general tax on consumption applied to both good and services, in a direct proportional manner to their prices, indifferent of the number of transactions recorded in the creation and distribution process previous to the date of collection of tax. For each transaction VAT will be exigibile after the deduction of the value added tax quantum bared directly though different components reflected in the cost of goods or services (Directiva 67/227/CEE). The same guidelines are re-introduced by the 112/2006/CE Directive.

The 112/2006/CE Directive regulates the VAT treatment applicable within the member states and norms the edibility of VAT in articles 63 to 66. Art. 66 covers the optional measures and stipulated that for certain operations or for particular chargeable persons VAT can become demandable the latest at the date of encashment. We can observe that the VAT payment at invoice encashment is a measure that can not be generalized for all economic agents or for all operations, but it could be applicable in specific conditions, established by taking into consideration the nature of operations and of tax-payers.

Other member countries of the European Comunity are also applying currently the principles of VAT encashment system: Belgium, Germany, Italy, Great Britain, The Netherlands, Poland, Slovenia and Sweden, to be more precise. A successful case, in these terms, is that of the integrations of the VAT encashment system in Slovenia, where it has been running since 2007. In the case of Slovenia, the VAT encashment system's introduction was implemented in two phases: in the first phase, starting with 2007, the tax-payers having a chargeable turnover less than the 208.000 EUR threshold, in the last twelve months received the right of transferring the VAT related to issued invoices at the date of cashing-in (and not at the date of issuance of invoice as stipulated in the VAT Law (TVA-1A),

art. 131 paragraph (1) adopted by the General Assembly of the Slovenian Republic). The second stage was launched in 2009 and it extended the special treatment concerning the collection of VAT encashment to the tax-payers whose chargeable turnover was less than 400.000 EUR in the last twelve months.

In Great Britain, Estonia and Sweden, based on some exemptions obtained from the European Commission, we can also find the principles of VAT encashment system being applied at the casing-in of invoices. The tax-payer entering the incidence of the special VAT encashment system has the right to collect VAT only when it cashes-in the invoices and, in the same time, has the right to deduct VAT as it manages to pay its suppliers.

The VAT encashment system in Poland presents a particularity as the system is not mandatory in application, but optional. The eligible VAT encashment system tax-payers can choose if applying such a system is beneficial in te case of their operations (European Commission - VAT in the European Community).

Research methodology

In elaborating the study we chose a normative approach. We analyze the regulations of the European legislation on the matter, specifically the European Directive referring to VAT – 112/2006/CE Directive – as well as the national legislation by which the European Directive regarding VAT is implemented. We generated a comparison of measures for economic re-launch that correspond to the VAT encashment system introduced in different member states of the European Union, with the purpose to identify the resembling fiscal treatments as well as the norms differing from the ones implemented in Romania, with regard to the VAT encashment system, by comparison to other member states' expertise in the matter.

On the occasion of participating to various events organized by the Corpul Expertilor Contabili și Contabililor Autorizați din Romania, the professional community of accounting practice in Romania, and by the International Fiscal Association, the Romanian subsidiary, there have been discussions with professionals coming from fiscal law, accounting and taxation with regard to the particularities of VAT encashment system in Romania, on the possible difficulties at implementation as well as on the benefits it brings to the tax-payers. Starting from the 112/2006/CE Directive, ART. 66, where the possibility for certain categories of tax-payers to apply the special VAT encashment system is presented, and taking into consideration, as well, the general aspects concerning

the taxation principles in the European legislation we aim at possibly identifying local regulation currently disharmonious with the international legislation.

Further, we have analysed the manner in which the European Union member states have integrated the VAT encashment system in their own legislation. Thus, the focus falls on the implementation particularities in the case of other EU member states, which successfully managed to run the VAT encashment system so that we might find the differences to the Romanian legislation that might have an important impact on the results for economic re-launch measures.

The final analyzed aspect regarded the impact on the application of VAT encashment system on the cost of financing and on return on invested capitals.

Findings and discussions

Many of the EU member states apply the special VAT encashment system. Among these we can name Austria, Estonia, Germany, Italy, Great Britain, The Netherlands, Poland, Slovenia and Sweden. After reviewing the legislation of these countries concerning the VAT, we observe that these countries apply what can be called a "clean" VAT encashmet system, in which the exigibility for collecting VAT comes into force at the date of cashing-in the value of the delivered goods or services, while the exigibility for deducing VAT comes into force at the date of payment of value for received goods or services. Therefore, the principle of neutrality in terms of VAT is unaffected and the mechanism respects the general principles of taxation regulated by the European legislation. Whilst in Romania, we can not speak of the same "clean" VAT encashment system. By modifications the Fiscal Code and of Norms of Practice of Fiscal Code, approved by Governmental Ruling no. 15/2012, Governmental Decision no. 1071/2012 and Law nr. 20/2012, the VAT encashment system only supposes a delay in payment of taxes and not necessarily a measure for economic re-launch with positive impact on the treasury of tax-payers.

We would like to emphasize a particularity of the VAT encashment system in Romania: if the tax-payer does not cash-in the invoice in term of 90 days from the date of issue, or the date at which the invoice ought to be issued, according to current legislation – the latest in the fifteenth day of the month following the generating event, the payer is obliged to collect VAT with the expiry of this term. While, the beneficiary would not be able to deduct VAT until the moment in which it will perform on the payment for delivery of goods or services received, according to Law no. 571/2003, Art.134^2, applicable from 01.01.2013.

Based on this regulation we consider necessary to emphasise an infringement of principle of neutrality of VAT, given the exigibility of collecting VAT for one delivery of goods or services that is not cashed-in within 90 days, happens with the exceeding of the deadline, but the exigibility to deduct does not happen in the same moment, but only at the moment in which the payment is made. Thus, if the beneficiary does not pay the supplier who applies the VAT encashment system within 90 days from the issued invoice, it will not be able to deduct VAT, whilst the supplier is obliged to collect VAT.

In order for Romania to avoid the case of an infringement procedure for not complying with the general taxation principles prezented in the 2006/112/ CE Directive, we propose the modification of the national legislation regarding VAT so that the term of 90 days in which the supplier is obliged to collect VAT to be eliminated. With such an approach, both the supplier as well as the beneficiary will be able to collect and deduct corresponding VAT to the transactions performed in the same fiscal period, by this ensuring the sustainability of the neutrality principle. Introducing such a modification, the VAT encashment system becomes an efficient one, it would not mislead, by name only (VAT encashment), the tax-payers and becomes a true measure for economic re-launch, supporting the SMEs by means of non-obligation to pay VAT corresponding to not-yet-cashed-in invoices to the state. In this way, having no cost of supplementary financing, the economic agents will not call on credits in order to be able to fulfill their fiscal obligations generated by un-cashed invoices and the cost of invested capitals will decrease, with a positive impact on the tax-payers' treasury, as well.

Another means to "neutralize" the fiscal legislation in Romania could be offering the option that, whenever exceeded the 90 days term from invoice issue, exigibility of corresponding VAT to become enforceable both for the supplier as well as for the beneficiary. Based on this approach the beneficiary will be able to deduct and the supplier will collect in the same time frame. This method, though, does not offer significant advantages for the tax-payers, given the fact that it behaves as a delay of VAT exigibility and not as a "clean" VAT encashment system in order for it to be considered an economic re-launch measure.

Out of the particularities of the VAT encashment system, one that is different from the ones stipulated in the correlated legislation of other EU member states, concerns the obligation to apply the VAT encashment system if the tax-payers have a turnover less than the 2,250,000 lei threshold, approximately 500,000 EUR. Other states consider the application of the VAT encashment system as optional for the tax-payers that do not exceed a particular turnover threshold. The example of Great Britain presents the case of an VAT encashment system that is

optional and not mandatory for every tax-payer not exceeding a threshold of 1.35 million sterling pounds. Entering the VAT encashment system can be done at the beginning of each fiscal period and exiting it is allowed at the end of every fiscal period, with the observation that there is no mandatory responsibility to submit notifications towards the taxation authorities (Gov.uk - VAT Cash Accounting Scheme, 2012).

The application of the system is optional in the case of Poland, as well, where the tax-payer applies at will the VAT encashment system, if the turnover doesn't exceed the equivalent of 1.2 million EUR (European Commission - VAT in the European Community).

In terms of needed notifications concerning the level of turnover for VAT encashment purposes, having as submitting deadline the 25th of October 2012 with the taxation authorities, there have been issued guidelines concerning the means of calculus of VAT by means of Methodological Norms for Application of Fiscal Code, as it was published on the 6th of November 2012, after the deadline for notifications. We would like to signal that there are essential modifications that may affect the manner in which the turnover threshold has to be computed. There are significant differences between turnover in terms of accounting and the manner of establishing the threshold turnover level for VAT encashment system purposes, particularly given the fact that the delivery of goods or services for which the tax-payer was not registered for VAT purposes do not count according to the latest adjustments in legislation.

Consequently, we support the case in which the entrance and exist in/out of the VAT encashment system would be optional for the tax-payer, because it highly depends on the bargaining power between suppliers and beneficiaries. There are cases in which the suppliers payment deadlines are longer than the deadlines to cash-in debts, in this situation the supplier finding as beneficial to apply only the general VAT rules and not the special VAT encashment system. If it were for the VAT encashment system to truly support the development of SMEs and for the measure to be that would come to the benefit of the tax-payer, then it is imperative to adjust the current legislation so that it may enhance the optional dimension of applying the system.

In Romania, the VAT encashment system doesn't influence only the tax-payers applying the VAT encashment system, but also the beneficiaries. One client of a tax-payer applying the VAT encashment system will incur difficulties with deducting VAT related to goods or services received. The economic agent, although not being included in the VAT encashment system, will not be able to

deduct VAT related to acquisitions but in the moment in which it delivers payment for goods and services received. Therefore, in our opinion, the measure can not be regarded as an economic re-launch procedure or as stimulating for SMEs, because applying the VAT encashment system supposes a higher degree of bureaucracy, detailed information recorded in the transactions journals. In order to avoid highly complex journal, which for big economic agents means costly investments in software applications, there will be a negative shift, on behalf of these economic players, from conducting business partnerships with SMEs applying the VAT encashment system. Therefore, additional pressure will be imposed on economic actors applying the VAT encashment system, as, on one hand, they will be looking market share or will be forced to decrease the commercial margin or selling prices in order to maintain their clients, all the above having a significant impact on turnover, on costs of financing and on the return on invested capital. In no other country in EU is the VAT encashment system affect third parties not applying such a system.

One of the most important challenges in implementing the VAT encashment system in Romania is the analytical recording by which transaction journals will need to be kept.

The chargeable legal persons registered for VAT purposes that apply the VAT encashment system in Romania have the obligation to record in their transaction journal the invoiced issued for delivery of goods or services for which the VAT encashment system is being applied, even though the exigibility of the tax does not become enforceable in the same fiscal period in which the invoice has been issued. Moreover, the journals ought to include additional information regarding the number and date of the cash-in document or the date at which the 90 days period expired for which the VAT becomes exigible, the total value of delivery of goods or services containing the related VAT figures, the taxable base and the related value added tax, the cashed-in amounts including VAT, as well as taxable base and VAT exigible related to the cashed-in amount or the exceeding of the 90 days deadline and should emphasize if there are differences from uncashed amounts maturing to exigibility and the taxable base and exigible VAT related to the respective amount, the difference representing the taxable base and VAT non-exigible (Law no. 571/2003 applicable starting with 01.01.2013 adjusted by Governmental Decree no. 15/2012, Governmental Decision no. 1071/2012 and Law no. 208/2012).

Moreover the transaction journals for big economic agents will need to include recordings both for business partners under the VAT encahsment system as well

for those for which the system has no incidence, so that the type of transaction, from a VAT encashment perspective, might be identifiable.

An additional disadvantage for tax-payers concerns the need to look up every supplier in order to establish if they are applying or not the VAT encashment sustem, so that the date at which the exigibility of deducting VAT enters force. Furthermore, there have been identified as procedures increasing the complexity level the means by which the date for cashing-in for compensation, cession of debt or using payment instruments as cheques, or other resempling payment instruments.

Under the current conditions applying the VAT encahsment system will generate supplementary costs regarding software adjustment, employing more labour.

In order to apply the VAT encashment system under the current economic conditions of Romania, there will be multiple additional costs related to software upgrades, increasing labor to ensure proper application of the VAT encashment system as well as for collecting VAT, even if the invoice can not be cashed in within 90 days from date of issue, correlated with the impossibility to deduct VAT for invoices unpaid within 90 days from the date of delivery. These costs will diminish the accounting result and will decrease the return on invested capitals. So far, there have been no studies emphasizing the impact of the current VAT encashment system on SME performance.

Results

The Romanian VAT encashment system contains some particularities, by comparison to other EU member states. The rest of EU states apply a "clean" VAT encashment system, in which VAT is deducted at payment of invoice and VAT is collected at cash-in of invoice. According to current Romanian legislation, the principle of VAT neutrality – principle regulated by the EU legislation in the matter, is affected, entering conflict with 112/2006/CE Directive. This aspect is important enough to become the point of start for an infringement procedure, with negative effects in attracting new investors, in the same way in which it is presented in the explanatory memorandum in the project of adjusting the Fiscal Code that introduces the VAT encashment system. In its current form, this VAT system is one that generates delays in VAT payments and not payment of VAT at cash-in.

The Romanian tax-payers not exceeding the 2.25 million lei are obliged to apply the VAT encashment system, without option for applying the special VAT regimes.

The manner of computing the turnover threshold is a controversial one, because it was only after the mandatory responsibility to declare the turnover level that there have been brought precious guidelines for computing turnover figures for VAT encashment purposes. Therefore the effects will be also felt by tax-payers' business partners who apply the VAT encashment system, with additional, significant costs. The administrative informatic tools will need enhancement, therefore additional costs, both for the tax-payers obliged to apply the special VAT system as well as for all business partners. In order to faithfully represented the transactions in the transaction journals the economic actor will need additional amounts of time-resources, which also translate into increased costs. In all, the return on assets is negatively impacted. The impact of implementing the new VAT encashment system will also have implications on the financial audit processes. Under this paradigm the effect is on the cost of audit, given the rise in audit fees, becuase, being the case of a financial audit activity, when the new system is implemented, the materiality threshold is minimised, whilst the quantity of audit samples will increase.

The VAT encashment system influences will not only cover the VAT dimension, as it will extrapolate on the informatic systems used by economic agents, on suppliers accounts for tax-payers who are not applying the VAT encashment system, having that the latter need to record transactions for all parties, depending on the VAT system the former are using.

Conclusions

The VAT encashment system in Romania seems not to have had, as starting point, a study of impact on supplementary costs generated by the introduction of the system. We recommend reviewing the implication of the new VAT encashment system before ruling its mandatory application. It is imperative to sustain the taxation principles established at EU level though European Community Directives and for this reason we consider that the VAT encashment system should be adjusted so that it may allow the beneficiary to deduct and for the supplier to collect of VAT in the same time frame.

The VAT encashment system should be optional in terms of application and should not have a negative impact on tax-payers who do not apply such a system.

In its current form, the VAT encashment system generates high costs for society that can not be compensated by proposed benefits, as its effect is only a delay from payment and not a payment of VAT at cash-in of invoice.

We consider the unavailability of data as a limitation of this research to compute the effects of the new VAT system on the return on invested capital, as well as the absence of relevant studies conducted in this direction, given that the VAT encashment systems implemented in other countries are harmonised with the European legislation and do not cover aspects of obstacles in implementation. For further research we would like to develop a model that might emphasise the impact of applying the VAT encashment system in terms of manufacturing, cash-flows, costs of financing and returns on invested capital and will update the model as soon as additional information is received related to economic agents, directly or indirectly affected by the VAT encashment system. On top of the already mentioned costs we need to add the increase of fees related to audit activities delivered, because the risk of implementing the new VAT encashment system will generate further higher risks that will impose a need to diminsh audit risk, as the economic actors performing audit activities would be forced to analyse massive amounts of data – requiring additional time to review.

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Regional dimension on competitiveness in the post-crisis period. Urban policy in Europe

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Abstract. *Europe is currently facing major new challenges such as globalisation, climate change, the demographic decline, migration and energy security. EU's urban policies are critical for the competitiveness growth of European cities. The integrated urban development policies offer a set of tools which have already proved their value in numerous European cities regarding the development of administration structures that are supporting an efficient and capable way to cooperate with one another.*

Keywords: urban policies; urban development; competitiveness; European cities.

JEL Classification: D24.
REL Classification: 16C.

1. Introduction to urban policies in Europe in the post-crisis period

The recent international crisis did not only caused the greatest contraction of world economic activity since the Great Depression, but also revealed the urgency of revising how the economy and the role of public policies are regarded. The crisis laid bare the serious flaws of a policy approach that naively entrusted regulation almost exclusively to the market itself, minimizing and weakening the role of the State. It also revealed failures in ethics and transparency that characterized key market players and their scarce accountability to the societies that suffered the consequences of its actions. The world was witness to one of the biggest crises in modern history, with enormous losses of wealth and a virtual evaporation of institutions believed, until then, to be solid. In fact, at the peak of the crisis, a significant part of the financial markets in several developed countries, which for decades experienced strong growth, disappeared in just two weeks. The effect on the rest of the economy and for several less developed countries was devastating, with significant losses in production and employment and social consequences still to come and that will probably continue for a long time if we fail to understand the changes in public action that the post-crisis context demands.

In emerging Europe there has been a strong tendency to open up financial institutions and financial markets. Financial liberalization can be analysed in its three dimensions: de jure openness (formal legislative liberalization); de facto openness (measured by the total amount of assets and liabilities of residents toward nonresidents of the country; and the role of foreign banks in the domestic banking sector. In all of these dimensions, emerging Europe has opened up a great deal, and an especially striking feature is the major influence of foreign banks operating in the countries. In Southeast Europe specifically, financial liberalization and integration with EU financial markets began in the early nineties, and it speeded up in the first half of last decade. Countries of the Western Balkans had almost completed financial liberalization by the end of 2002. Since 2007 Bulgaria and Romania have been members of the EU and thus of the single European financial market.

Measured by the share of foreign ownership, the banking sectors in all countries in the region have been majority-owned by banks from Austria, Italy, France, Greece and Turkey since 2005. In the literature, the advantages of financial integration are seen as relating to the benefits of financial deepening. However, there is no statistically significant and robust evidence of positive effects on sustainable growth. The benefits of integration have much to deal with institutional strengthening, rather than a direct impact on growth. Financial liberalization is also seen as a buffer against domestic economic shocks, but the

current crisis was caused by a global shock, and financial markets were a key transmission channel.

The European Union has formal responsibility for regional policy under the treaty – but not for urban policy. Indeed a Commission proposal to give the EU responsibility for urban matters was rejected by member states in 1991. But since then a growing number of policy-makers, researchers and observers have argued that the EU should increase its involvement in urban affairs. Some have argued for a greater urban dimension to regional policy. Others have more directly called for an explicit EU urban policy.

The argument that cities are the economic drivers of regions has become increasingly important at a European level, as national governments have focused upon the institutional and economic linkages between cities and regions. In particular the concept of city-region has become an increasingly influential idea. This is a new version of an old argument, which essentially says that the administrative boundaries of cities and local governments no longer match their economic realities. In institutional terms it is argued that critical policy issues have to be addressed at a regional or sub-regional scale – for example, economic development, transportation, environmental and waste management and land use planning. On the economic performance front it is argued that urban and regional economies are crucially intertwined and the performance of one directly affects the performance of the other there is not a separate urban and regional economy. Hence since there is no conflict or difference in fact between urban and regional economies - there should be no policy difference.

1.1. The dimension of urban competitiveness

The impact of fundamental developments and the changed role of the city have led to the emergence of urban competitiveness. The new political economy imposes a different approach method: along with the increase in the number of companies that are more flexible and mobile, contributing to the economic performance and well-being of a city, city competitiveness is first of all the effort made to depict the respective region in the most attractive way possible. Given the circumstances, if cities obtain competitive advantages, they must outrun their competitors in the battle for investment attraction in the leading sectors of the new globalized economy. Certain economists, such as Krugmann, support the theory according to which competitiveness is just the attribute of independent economic companies and not of cities, regions or states. Competition exists exclusively between those involved in the phenomenon and who respect a well-defined structure of objectives, since they are autonomous. So the city itself is not in competition: it can be defined as competitive when it hosts various competitive companies. Urban competitiveness is the entrepreneurial competitiveness in a

specific area, measured through quantitative factors, such as gross added value. In my opinion, competitiveness is the ability of an economy to attract and maintain companies with stable shares or that are increasing on the stock market, at the same time maintaining a stable or high standard of life for those who participate in it. City competitiveness does not only pertain to the income obtained by companies, but to the way this income is structured to residents.

Competitiveness is different from competition. Competition is a score of zero to one where if a city wins, another loses. In contrast, all cities can increase their competitiveness at the same time so that all cities and the national economy can increase and have benefits simultaneously.

Competition between European cities is poly-stratified and complex. Cities of international importance, such as London and Paris, compete on one level only; other smaller cities compete in certain sectors, defined more and more by their intangible assets. In 1990, Camagni said that obtaining success in an urban competition has to do with the development of the method specific to a certain activity sector, namely the one that offers the competitive advantage to the city in question. This will consolidate the urban competitive advantage, but, at the same time, it will create a permanent inflexibility, which will have negative effects on a continuously changing production system. The fact that despite the increased interest in such problems, such as innovation and creativity, the multiplier of income and the multiplier of occupation, strongly related to inter-urban and intra-urban connections, continues to play a very important part in the process of obtaining income in cities must be mentioned.

Competition involves the existence of winners and losers, but what is a winning city in this context? Arguments brought to this question have suggested the fact that success is, first of all and especially, ensured by the capacity of the city to generate income. But even with this explanation, the notion of competition between cities is not completely elucidated, there still being some problems left.

Firstly, is the city truly an entity in a competition or does this competition manifest only in a group of urban actors, among whom there are probably conflicts of interest and that support this competitive fight? To what extent can a city influence its own chances of obtaining success?

Secondly, the success obtained as a result of the increase in the capacity to generate income involves stability for a longer period of time when this tendency of income increase is constant.

Thirdly, it is obvious that we are not dealing with a game with no stakes, where there are no advantages on either side, or in which none of the parties has

anything to lose; *every city, this means that the cities are competing taking into account the relative rates of income, rather than the absolute rates of income.*

Fourthly, *the factor that connects both the capacity to generate income and their stability is power and, first and foremost, the decision power and the capacity to determine the behavior of other actors.* Winning cities are strong cities, but the power of every city is very hard to measure.

Fifthly, *the following are taken into account: every city is located in a system of cities and the capacity to generate income does not produce effects only regarding the administrative area of the locality in question; these effects, indirect or induced, produce a diffusion effect, differently, as far as neighboring areas go.*

Sixthly, *the capacity to increase income also involves the increase in the capacity to create jobs,* but this is not always necessary as long as the result of the continuous innovation process is a demand lower than the labor force. *If the total production of the city increases faster than productivity, the occupying degree will increase and otherwise it will decrease.*

1.2. The role of project management in the increase of urban competitiveness

In order to respond to current urban problems, generated by urban competition and the continuous increase of the demand for services and public goods, a new method of governing and administrating cities is necessary, focused on the demands on the market, action and result. This means redirecting the attitude of local authorities from "administration" to "management", borrowing aspects of management from the private sector philosophy. The task of urban management is to improve the attractiveness of the city and its competitive position entirely, harmoniously and durably. In order to do so, urban management must develop an integrating strategy that takes into consideration the relations between the demand for urban services and functions, planning of buildings, offices, industrial areas, shopping centers, the infrastructure, etc. and the financing of these operations. Therefore, a pro-active urban management is necessary, seen as an activity of integration and coordination of all public and private activities at urban level (van Dijk, Nientied, 1993).

World Bank, in cooperation with UNCHS, promoted this approach through the Urban Management Program, whose main objective is to improve performances in the key areas of urban development planning. The program supports and finances integrated development operations related to the infrastructure, field management and environmental management. Through this program, World Bank and UNCHS also promote the idea that cities are economic engines of development, economic development being seen as a key development objective and urban management is an essential condition.

Competition between urban areas exists and is emphasized by the tendencies toward a common European market. Therefore, Europe is in a phase regarding a transition to a cultural society and a re-evaluation of the city's virtues. Local governments were given increasing responsibilities, while central governments request cities to become independent financially. At the same time, local authorities must remain neutral when distributing resources and prove their efficiency, not just through expenses or tax collection, but through an activity that was not related to them previously – an entrepreneurial initiative in generating additional income for the management and development of the city (Ave, 1992).

Financing of programs and development projects is a component of urban management and represents, according to its complexity, a difficult task for the local administration. Through their financial value and scale, urban projects often exceed the power of the local budget and require complex financial mechanisms, namely more than just a financing from your own sources.

A way in which municipalities can pay from their own sources is to annually save and invest in the savings, in the construction of a budget specific to every investment program. Although financing from your own sources offers advantages as far as income in the capital financing regarding operational expenses go, it has two major disadvantages (Căluşeru, 2002):

- Insufficient funds for the necessary capital, because the big number of projects or the high costs of certain projects can cause municipality to exceed the financial capacity of a local budget;
- The lack of equity between generations, because those who benefit from the project ought to pay for it, in general, which is not entirely true for urban projects, in which benefits are seen throughout generations.

This disadvantage is an argument for crediting. Municipal loans on the capital market or from the population, through issuances of bonds allow local authorities to implement projects sooner, ensure a bigger equity between generations and equalize the cost of the investment in time. The construction of projects sooner, rather than later, means they will generate benefits sooner. In urban development projects, these benefits, often hard to quantify, can be associated with the creation of jobs, productivity increase, the improvement of the business environment or life, or the revitalization of the historic patrimony.

A particular case, non-reimbursable credits, from international assistance programs, is another important financing source for certain development projects. For Central and Eastern Europe, the last ten years of international assistance have brought non-reimbursable development funds, for local authorities, through PHARE, ISPA and SAPARD programs, but also through international cooperation agencies of the governments of UK, Switzerland, Germany, the

Netherlands, etc. However, this source is a non-durable alternative intended, punctually, for emergency needs, considered by the financer as a strict necessity.

Another possibility to finance urban development is the partnership between the public and the private sector. This occurred in Western Europe in the '80s, generally in urban revitalization and field development programs, considered an important tool in the dynamic of urban projects that presented common features for the two partners. Because the externalities of such projects affect both the market and the possibilities of the administration to intervene, a partnership between the two components became necessary.

The public-private partnership represents mechanisms of cooperation between a public partner and a private partner, for a common purpose, in which risks, costs and profits are distributed proportionally among partners (Bramezza, van Klink, 1994). In urban areas, the public administration and the private sector maintain their traditional roles regarding investment programs:

- The role of the local public administration is to ensure the physical planning, to follow legal procedures and to get involved in field management. Additionally, it is responsible for the infrastructure and the financing of some of the activities.
- The traditional role of the private sector is to contract works in urban infrastructure, buildings and public utilities, to carry out investments and to finance certain related activities.

A public-private partnership can have various financial dimensions or it can be made in various organizational forms depending on the level of the projects, the complexity and the opinions of the partners involved. In any event, it begins with a common interest, from the complementary nature of the partners' roles and the proportional distribution of the profit and risks and is an "advanced" financing method and an efficient tool in overcoming the imperfections on the market (McQuaid, 1994).

Regional Operational Program 2007-2013 *Priority Axis 1: Support of the durable development of cities – urban increase poles*, within the Regional Operational Program (ROP), aims to increase the quality of life and to create new jobs by rehabilitating the urban infrastructure, improving urban services, including social services, as well as developing structures to support business and entrepreneurship. Given the current situation of cities in Romania, the funds granted to urban development will be spent as follows: 60% for the public urban infrastructure, 25% for the social infrastructure and 15% for the business environment.

In this context, the integrated urban development and regeneration plans will contribute to the fulfillment of ROP's specific objective, namely the increase in

the economic and social role of cities, by applying a poly-central approach for a more balanced development of regions, in accordance with the objectives of the National Strategy for Regional Development and the National Strategic Reference Framework, as well as the Strategic Community Directions for the current programming period 2007-2013.

The referential financial attribution available for increase poles, for 2007-2013, is EUR 621.27 million (ERDF and co-financing from the state budget):

- Iasi: EUR 111.25 million;
- Constanta: EUR 90.32 million;
- Ploiesti: EUR 97.00 million;
- Craiova: EUR 95.5 million;
- Timisoara: EUR 70.49 million;
- Cluj-Napoca: EUR 82.41 million;
- Brasov: EUR 74.30 million.

In Romania, three types of urban increase poles have been identified:

- *Increase poles* – 7 big cities and their area of influence appointed through GD: Iasi, Constanta, Ploiesti, Craiova, Timisoara, Cluj-Napoca and Brasov;
- *Urban development poles* – 13 municipalities appointed through GD: Suceava, Bacau, Braila, Galati, Pitesti, Râmnicu Vâlcea, Arad, Deva, Satu Mare, Baia Mare, Oradea, Sibiu and Târgu Mures;
- *Urban centers* – cities with over 10,000 residents, other than increase poles and urban development poles.

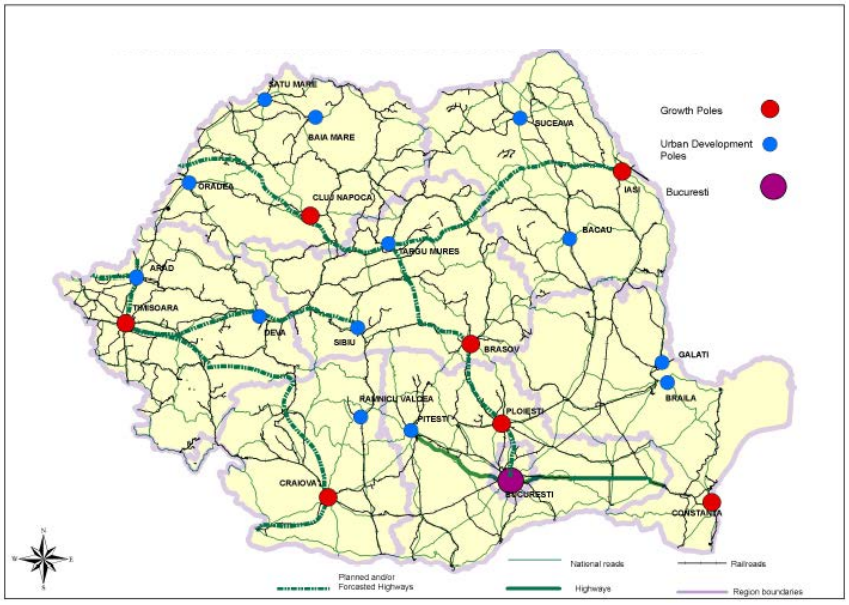

Figure 1. *Growth poles and urban development poles*

Table 1. *Urban development projects*

Subfields	Submitted IUDP	Submitted projects		Contracted projects		
	Nr.	Nr.	Total value (EUR million)	Nr.	Total value (EUR million)	ERDF (EUR million)
Increase poles	7	15	169,9	6	110,6	69,7
Urban development poles	13	86	297,5	8	34,7	22,1
Urban centers	96	333	1.036,4	41	206,7	132,2
Total	116	434	1.503,8	55	352,0	224,0

Integrated urban development plans (IUDP)> previous European experiences (URBAN I, URBAN II) showed that the integrated approach of economic, social and environmental issues in degraded urban areas were a successful method to solve them and to obtain a durable urban development. This approach consisted in simultaneously supporting activities to physically renovate the urban environment along with those to rehabilitate the basic infrastructure, as well as actions for economic development, competitiveness and occupancy increase, the integration of ethnic groups as far as environmental protection goes.

Conclusions

1. Europe is currently facing major new challenges such as globalisation, climate change, the demographic decline, migration and energy security.

2. EU's urban policies are critical for the competitiveness growth of European cities. The integrated urban development policies offer a set of tools which have already proven their value in numerous European cities regarding the development of administration structures that are supporting an efficient and capable way to cooperate with one another.

3. The crisis laid bare the serious flaws of a policy approach that naively entrusted regulation almost exclusively to the market itself, minimizing and weakening the role of the State.

4. The European Union has formal responsibility for regional policy under the treaty – but not for urban policy.

5. In order to respond to current urban problems, generated by urban competition and the continuous increase of the demand for services and public goods, a new method of governing and administrating cities is necessary, focused on the demands on the market, action and result.

6. Financing of programs and development projects is a component of urban management and represents, according to its complexity, a difficult task for the local administration. Another possibility to finance urban development is the partnership between the public and the private sector.

7. The integrated approach of economic, social and environmental issues in degraded urban areas were a successful method to solve them and to obtain a durable urban development. This approach consisted in simultaneously supporting activities to physically renovate the urban environment along with those to rehabilitate the basic infrastructure, as well as actions for economic development, competitiveness and occupancy increase, the integration of ethnic groups as far as environmental protection goes.

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Intangible assets as a source of competitiveness in the post-crisis economy. The role of brands

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Abstract. *The post-crisis economy brings changes in the functions of the brands. The aim of this paper is to evidence the functions of the brands as part of the intellectual property and of the intangible in the post-crisis economic frame and to offer an overview of the evolution of these functions before and after economic crisis.*
The economic crisis was and still is a real challenge for the companies that overrated their intangible assets or which kept in their balance the intangible assets with no correct estimated market value. Hereby, some companies were gaining from crisis because of the good management of intangible assets, but some were stand to lose. The new economy needs innovation, flexibility, and competitiveness in order to face the competition between brands.

Keywords: new economy; intangible assets; brands.

JEL Classification: F29, O19, O31.
REL Classification: 11C.

1. Introduction

The knowledge economy requires increasingly the intangible as the main trend especially in the current post-crisis economic frame. Intangible assets were immune against the crisis, while tangible assets have suffered from it.

In the new economy, what matters is the pattern of thinking adopted and the creation, which represents the key of competitiveness. The ownership of ideas and how to exploit their economic potential are the factors that influence more and more the future of the organizations and companies, and also it is the one that gives the competitive advantage in the market. The economic crisis has nothing for it but to emphasize the role of intangible assets.

The companies based on intensive knowledge exploit the new ideas that lead to innovation. In the new economy, a business can be built around a pattern of thinking rather than a model of products and services.

For an organization to be effective, must be efficient allocation of the resources and the transformation of the economic value of intangible assets, equally.

However, the investment in intangible assets (brand[(1)], know-how, human capital) leads to rapid and flexible adaptation of companies in the market. Ultimately, the theory of new economy shows that, excluding products and services, the market competition takes place in terms of intangible assets.

But this philosophy began to be accepted since the beginning of the 21st century, until then being accepted the strong influence of the ideas of Adam Smith, that the work should be divided so as to produce as much as possible in a short time. The new economy, the knowledge economy, imposed new perspectives. Being a vital element, the knowledge must be preserved by the companies that want a sustainable profit. Thus, considering the fact that, today, with only one click, the competition may immediately copy the product of a company, and even make it cheaper and more efficient, the company must have a new knowledge at higher level, being ready to bring out a new product immediately, more efficient and more competitive than the previous product.

2. The role of brands before and after the economic crisis

The tangible assets are the physical assets generated by a company. Often, it does not matter for the value added very much what investors invest in company. The rest of the company's value is generated by the intangible, i.e. intellectual property, research and development. Due to globalization manifested in the new economy, the intangible assets have replaced the tangible assets, becoming the largest source of value added and of innovation. Among intangible assets the

brands are the most valuable. "Like other forms of intellectual property, the brands are created and developed by effort and attitude of the people" (Gordon et al., 1994, p.110).

The brand is an intangible asset with a very high percentage in the business of a company. The importance of the brand for the value added of companies consists of several aspects: the relevant products and services, ahead of the competition, protection of company's reputation and goodwill, consumer protection, the importance in company's transactions (acquisition, merger), the conquest of new markets (it refers to the extensibility of the brand), customers' loyalty, creating and maintaining a favorable image for the company by consumers or business partners.

A brand works on a market as cyclical process. The brands create value by the fact that generating demand and providing the earnings of companies in the future, they allow price increases to a certain volume of sales. But brands cannot survive in a passive medium, markets are dynamic and therefore their influences on them are constantly changing. Thus, brand strategies must distinguish and adapt to market, brand management being a constant process. The brands must be synchronized with the markets in which they operate.

Due to the global economic crisis, the subject of intangibles and, in particular, of brand is intensively discussed. Thus, some companies have benefited from the crisis following administration of intangible assets and others had lost from it. The credibility of this theory remains to be seen by studying the economic functions of the brands and their role in the market.

In the economic crisis, many consumers were forced to reduce their expenses and therefore were more aware of the choices they have made.

An Interbrand(2) report presents a ranking of the three remaining brands in consumer preferences in time of crisis: Apple, Sony and MAC Cosmetics. Even in the post-crisis period, Apple remains number one brand in specialty charts.

To survive the economic crisis, it was necessary that brands give consumers also emotional satisfaction, not only to meet their needs. Creating an emotional connection between the consumer and the brand saved the latter from economic collapse. The closer is a brand to the consumer, the more it becomes indispensable for him and, even if recession, will not give up to buy it. During the economic crisis, consumers have generated a significant value added to the brand which highlights in the post-crisis.

3. Monopolistic competition – copetition of the brands

It is important to note that makes sense the study of brands only within markets with imperfect competition, the monopolistics specifically. The monopolistic competition is the competition in a market that has "sufficiently many companies, so each of them to assume that their rivals will not change the price even if they decrease their price" (Stiglitz et al., 2005, p. 220). This type of competition implies two conditions. The product differentiation – the most important condition - means that a product of a company has different characteristics from the competition which makes it "unique producer" and commutes the monopolistic competition to a competition between products, finally. Here comes the role of brands that have become very important elements in the contemporary economy. Consumers can structure the supply due to brands. Only the brand is the one which "shapes" the value of companies.

The monopolistic competition has several features necessary to mention to understand the importance of studying brands within it:

1. the companies' size: the bigger they are, the lower is their number and vice versa;
2. the companies face restrictions due to brands;
3. there are necessary some additional expenses related to product differentiation;
4. the higher is the cost, the higher is the price.

On the monopolistic market, the companies set the price, and the competitive companies have the marginal revenue equal with the price. The price fixing is such as to take place a profit maximization. The demand curve is more inelastic, as the company will differentiate more products. In this case, the company can raise the prices without substantially lower sales.

The company sets the product level at that level where the marginal revenue will be equal with the marginal cost. The monopolistic market equilibrium can be described by the following aspects: the price exceeds the average cost at which economic goods can be produced, at a higher price produces a smaller amount of products (Stiglitz et al., 2005, p. 241) and individuals appreciate the diversity and therefore the producers are forced to diversify their brands. It is mentioned that the economy efficiency consists exactly in the "fight" between manufacturers of different brands.

According to a study by Brand Finance[(3)], the brands tend to change the supply curve at down due to the following elements: large volume of sales as a result of consumer loyalty, low cost of capital, economies of scale achieved through higher volumes.

Therefore, it turns out the importance of intellectual property in the new economy, especially in times of economic crisis. Brands are the ones that make the difference in a market with monopolistic competition.

4. Brands assessment methods relevant in post-crisis

In the new economy, it is noted a strong tendency to mergers and acquisitions, where the real stakes are the intangible assets, mainly brands. Old brands are huge sources of profit; additionally, the creation of a new brand today involves too high amounts, especially due to the outcomes of the economic crisis. The importance of assessing brands began to appear from the '80s, among with the wave of mergers and acquisitions at that time. Mergers and acquisitions are the most important applications of brand valuation in the context of economic globalization and the economic crisis. Thereby, it extends the global impact of the brand.

The brands are assessed by reference to the various elements that can be compared: the level sales, market share, cost of production, cost of sales, operating profit. In terms of assessment, the brand is a sustainable asset of the company, which can be very valuable because it is the result of investments to improve market position.

In the literature it is considered that "the value of brands is the consumer guarantee, so if manufacturers deceive consumers' expectations, they will respond by devaluing the brand" (Gordon et al., 1994, p. 111).

In terms of assessment as an intangible good, the brand is the result of investments in order to maintain the goods' quality. Value of brands includes all the benefits that will have the consumer who has purchased the economic good. It is considered that the most valuable brands for companies are those that are relevant to the buyer's decision to buy an economic good. When a company has captive customers, who buy because they have no choice, it is considered that the brand has very little value.

The elements that add value to the brand in the post-crisis economy are: position against the competition, the impact on consumers (with everything involving him: loyalty, recognition or rejection), development potential of the brand (which is associated in assessment methods with some indexes) and company's ability to exploit brand. But why is it necessary to assess the brands? The value of a brand can be perceived as useful in the balance sheet; but actually these are the applications of brand assessment: setting the position from competition, establishing the market strategies, securing the funds by identifying the intangible

assets, mergers and acquisitions, value-monitoring over the years, investor relations, resource allocation within the company.

"There isn't value, only values" (Puiu, 1996, p. 66); therefore, for the same brand assessment the results using different methods will be different.

"In turn, the brand has incorporated some assets" (Aaker, 2005, p. 50), and a full assessment of it must include its assets analysis.

1. *The loyalty* refers to levels of consumer loyalty in each market the brand activates and involves leverage tradings and time to respond to competitive threats. There are several levels of customer loyalty towards the brand: loyal consumer, satisfied consumer, possibly dissatisfied with possible changes of the brand, dissatisfied consumer who does not move to another brand, dissatisfied consumer for which the switch to another brand is not profitable, consumer easily switching to another brand, not having the loyalty towards the brand. The value of a loyal consumer is the impact that his purchases has on market, not their value. A common strategy today, but erroneous, is to attract new customers, while neglecting existing ones. This happens despite the fact that it is much cheaper to maintain the old customers than attracting new ones. The consumer loyalty is a barrier to new entry of competition in the market. On the one hand, it can be difficult to enter a market where consumers are loyal to existing brands, but, on the other hand, can be a real challenge. An important measure that can be taken is to create consumer loyalty costs shift to another brand.

2. *Recognition*, the second asset incorporated in the brand, involves the degree of recognition of the brand in against the competition; it relieves the brands that matter within the market and therefore can be considered for this attribute that it is interconnected with the economic "life" of the brand.

3. *Perceived quality* – the third asset incorporated in the brand – refers to the attributes that signal brand's quality and how it can turn into a competitive advantage; in most cases, the price is an indicator of the asset. Perceived quality incorporates value through the following aspects: the reason behind the acquisition, product differentiation in the market, interest of distribution networks.

All assets listed above create value for the company. For example, they influence consumer preferences for a particular economic good and thus increase sales. In addition, strong brands represent competitive advantages in the markets they serve.

It further summarizes a number of methods to evaluate brands considered to be relevant to the topic of the paper, rather for post-crisis economic frame: Interbrand, BrandZ, developed under aegis of Millward Brown[(4)], and stock value method.

The Interbrand Method treats brands as some financial assets that create significant added value for companies. The evaluation by this method can be applied only for big companies and it is based on how much the brands are likely to earn in the future. Over 20 years, the company has evaluated over 5,000 brands worldwide. Interbrand studies goal is to demonstrate that the brands are very important assets for a business, in many cases the most valuable. John Murphy, founder of Interbrand, made a very interesting statement: "The tendency is to treat major brands as goods being bought, sold, stored, mortgaged, transmitted through a license, and so on, not as tiny particles like Scottish fog, which is everywhere, but can not be found again" (Cocos, 2003).

There are several conditions that a brand must fulfil in order to be evaluated by the Interbrand method: there must be public data on the financial situation of the company, at least one third of the brand's earnings must come from outside the country of origin, the value added must be positive; the brand portfolios and the airlines have to be excluded.

This method studies three aspects:
1. The financial performance of the branded products or services, in which data on revenue streams assigned to intangible assets is processed. Then is determined the revenue assigned to the brand by Brand Index. In the next stage of financial analysis, the revenue is discounted using a discount rate. Discount rate is the score that determines the strength of the mark. All financial analysis that the brand is subjected to is drawn using public financial data of the company.
2. The role of brand in the purchase decision process: analyze how the brand influences consumer buying decision applied to economic gainings leading to earnings of the brand. At this stage it is made out a forecast for the next five years of the earnings generated by the brand, depending on the values of the previous year (future cash flow capitalization method).
3. The strength of the brand: this is a reference parameter for the brand's ability to bring income and future benefits. The advantage of the strength of the brand is that two brands that can generate future income identical can have different values. Brand strength is actually a combination of seven factors; each factor receives a rating. Factors are weighted so that the total score is up to 100. Factors, in turn, are decomposed into sub 80-100 indicators, which vary from one area to another.

To approve the brand value obtained, it is made a legal analysis to verify that the brand belongs to the company.

Interbrand reports emphasizes the importance of brand capacity to create its own demand and sees it as an aim.

Specialists from Interbrand have developed another method: the future net profit update. This is done by providing a consistent link between past evolution in profit assigned to the brand (the last three years) and its future evolution (maximum five years). But there are not taken into account profits from franchising, or the ones obtained from expanding its product range.

The Millward Brown method is based on a strong correlation between perceived brand value and growth potential of the market share.

Unlike Interbrand method, which applies only to large companies, Millward Brown evaluation method works for both large companies and small ones, and includes three steps, described in the following.
1. Calculate current earnings of the company, based on public financial data. Then calculate the total revenue for each brand of the company (if it has many), for each geographical area or market. From this revenue there are deducted the operational costs, taxes, current income taxes. It is obtained an outline of the company's total intangible assets.
2. Apply Brand Contribution Index, which shows the level of origin of the company's revenue for the brand. This index can have values from 1 to 5, so the brands with index 5 are those that bring most of the company's revenue. This index is determined from the analysis of that country, that market and the studies on the brand made by the company Millward Brown.

3. Forecast the revenues provided by the brand, with a forecast growth or possible risks. Some forecasts are analyzed for the markets of the countries in which the brand is present and how it can influence future brand shares.

The result is expressed by an index called Brand Momentum, which can have values from 0 to 10. Value 10 marks with the highest potential. It also estimates the risks associated with these future income.

Brand value will be calculated by the formula[(5)]:

$$\text{Brand_value} = \text{Intangible_revenue} \times \text{Brand_Contribution} \times \text{Brand_Multiple}$$

The method is one of the most appreciated by professionals and enables companies to evaluate the performance brand in competitive markets. Unlike other assessment methodologies, this method is also based on interviews with more than one million customers in 40 countries.

Below are exposed major changes that took place in BrandZ reports in the post-crisis period. Since 2010, the report also highlights the importance of social media within the relation between brands and consumers. Online communities created in the post-crisis emphasized how brands have loyal and aroused the interest of consumers. In addition, the online phenomenon is growing increasingly larger and

is very vital for successful brands. Since 2011, BrandZ introduced two new indicators in the analysis. These indicators are closely connected with social media implication and post-recession period. TrustR is an indicator that refers to the combination of consumer confidence developed over time in the brand and recommendation on fulfil the promise. The second indicator is ValueD and represents a balance between consumer desire and the price they are willing to pay for that brand. The two indicators help brands optimize sales, profit and market positioning.

The crisis has revealed many questions about consumer behavior. Confidence in certain brands became increasingly enhanced among consumers. Another important aspect is that after the financial crisis consumers became more alert to the company's policy of environmental responsibility, therefore companies that add "green" value to their brands had won.

Since 2011 Millward Brown top brands has new entries from emerging markets such as China, India, Brazil, Russia. The 2012 Top even has new entry from Africa and from Australia. Also starting in 2012, one of the top five brands come from a developing economy.

The stock value method refers to the fact that the value of a brand can be understood as part of market capitalization, so that:

- If the percentage of market capitalization value is low, it means that in those businesses the largest share belongs to other types of assets.
- If the percentage of market capitalization brand value is high, it means that in the business the brand has a very important role. Therefore, investors should be cautious to brand value development as a crash can make them lose income.

The method is actually based on the theory of efficient markets, that available information about the future profitability of the enterprise are provided by data exchange (Feleaga et al., 2004, p. 166). The stock value method can be described as follows: the company's market value will decrease the replacement cost of tangible assets; from the obtained value, which represents the balance as intangible asset, brand value is extracted using statistical regression.

Given the above, the economic crisis has been and is still a challenge for companies which overstated intangible assets or kept in thier balance intangible assets without a fair market value appraisal. Thus, some companies have benefited from the crisis as a result of administration of intangible assets and others had lost.

Conclusions

In the new economy, brands play an extremely important role. At company level, the brand is the "engine" element to make it work on a highly competitive market.

A valuable brand brings many benefits to both producers and consumers in the post-crisis period. Of these, the most important would be outlining customer experience, optimize investment in mergers and acquisitions, insurance profits and protect market share.

In times of crisis, new opportunities for brands are created: the opportunity to show the strength on the market or increase their market share. An alternative to this could be the application of competition function by creating new products, possibly according to short-term consumer needs. Also, it is necessary for brands to be as transparent as possible in relation with the market in order to survive the crisis.

Paradoxically, the financial crisis revealed brands from emerging economies.

In the post-crisis, can no longer discuss about mainstream consumers in the same proportion as before the crisis. They are often making a choice of quality or a choice of price. Furthermore, the consumer decides, increases brand value by supporting through social media, promotion, while before the crisis the consumer has to be charmed by the brand. The brands that have managed to differentiate survived the crisis and more than that, they managed to gain a stronger position in the market.

Notes

(1) According to Oxford Dictionary:
Trademark = a symbol, word, or words legally registered or established by use as representing a company or product
Brand = a type of product manufactured by a particular company under a particular name: a particular identity or image regarded as an asset
Author's note: Trademark is the business' property and has to be registered in authorities as a legal property. This paper is about brands.
Legal protection given to a brand name is called trademark.
Read more: http://www.investopedia.com/terms/b/brand.asp#ixzz2CxR6OqZc

(2) Interbrand is one of the world's largest branding consultancy companies specialized in branding services including brand strategy, analysis, evaluation, management of brands and brand portfolios.

(3) Brand Finance is a consulting company to evaluate brands.

(4) Millward Brown is a company specialized in branding, media and communication.

(5) According to BrandZ Reports 2007-2012.

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