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INTEREST RATES AND CONSUMPTION VOLATILITY: ANY IMPLICATIONS FOR CONSUMPTION SMOOTHING?

Ibrahim ALLEY

JEL G20

Abstract

The roles of market interest rates in consumption smoothing have been fairly examined; their effects on consumption volatility however in various country groups have received limited attention. This study aims to estimate the effects of these rates on consumption volatility based on data from developed and developing country samples. The General Method of Moments (GMM) and the Two Stage Least Squares (2SLS) estimation techniques employed, due to the endogeneity property of the specified model, yield interesting results. Lending rates reduced consumption volatility in developed countries while saving rates did not worsen it. The rates had no effect in developing countries and mixed effects in the whole sample. The rates are relatively lower in developed countries and this partially explains why consumption volatility is lower in developed economies than in developing counterparts. As a result, the developing countries need to implement policies to reduce interest rates as a means of reducing consumption volatility and thus enhance consumption smoothing and maximise their welfare.

Keywords: lending rates, saving rates, consumption volatility, consumption smoothing.

1. Introduction

Personal incomes as well as other macroeconomic variables often follow a stochastic trend (Chamberlain and Wilson, 2000); consumers thus often have to approximate their values when making decisions. As rational utility-maximising economic agents, consumers generally allocate all their lifetime incomes to consumption\(^1\). This assumption, and the assumption that consumers are constrained by playing ponzi game\(^2\) not only results in Walrasian satisfaction of intertemporal budget constraint but also that consumption is planned on lifetime (expected or trend) income. Thus, consumption path may deviate from the actual income path, resulting in surplus and deficit at different points in time.

Efficient management of the surplus and financing of deficits depends on effectiveness of the financial sector. A perfectly competitive financial sector

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efficiently prices saving deposits in a way that reflects market conditions. The resulting rates on savings would be such that will not distort intertemporal consumption decisions. In the same vein, such a market would equally price deficit financing in such a way that lending rates would not be too high to discourage the consumer from borrowing when the actual income is below planned consumption.

However, in many countries the financial sector is not competitive as it is dominated by the banking industry. In this situation, consumers have limited financial options to manage or smooth their consumption. Poorly developed domestic financial markets that characterise developing economies may constrain domestic demand by restraining consumers from borrowing against their future incomes (Gourinchas and Jeane, 2011). Together with imposing lending constraint that distorts consumption decisions, poorly developed conditions of the financial sector also distort saving decisions (Chamon and Prasad, 2008; Mendoza, Quadrini and Rios-Rull, 2009) leading to sub-optimisation of intertemporal consumption path.

Also, consumers in developing economies face high bank lending rates, relative to those obtainable in developed countries. This imposes a cost on the consumption smoothing process and may force consumers to take a suboptimal consumption path dictated by their income, other than that desired. Bank lending rate is thus a form of transaction costs which Attanasio and Paiella (2007), Paiella (2006), Jorgenson (2002) and Luttmer (1999) identify as a factor that limits participation of consumers in a given financial market and discourage them from buying into credit arrangements with which they can maximise their utility.

On the other hand, saving rates on deposit in many developing countries tend to be strikingly low. The rates, relative to the consumer discount factor, determine whether or not consumers take advantage of the saving deposit in optimizing their consumption. If the rate is lower than the discount factor, consumers may reduce their savings as the optimal strategy in the short run; this however may not be optimal in the long run when considered in the light of ‘non-ponzi game’ condition which is often seen as a constraint to consumers’ choice.

These transaction costs limit consumer decisions, and this has though been established. However, the extent to which they affect the consumption smoothing process failed to be thoroughly analysed. While many previous studies have identified various causes for consumption volatility such as anticipated shocks to labour income or asset returns (Heathcote and Perri, 2015), partially or unsecured risks to labour income due to incomplete market (Challe and Ragot, 2015), liquidity constraints and financial development (Bhattacharya and Patnaik, 2015; Dogra and Gorbachev, 2015), limited attention has been paid to the effects of interest rates (the lending rate
and the saving rate) on liquidity constraints and consumption volatility. There is little
evidence on how high lending rate in developing economies, relative to that in
developed countries, may discourage borrowing and constitute or impose liquidity
constraints.

This study thus contributes to the literature by estimating the independent
effects of lending and saving rates on consumption volatility, using data on 117
countries. It also compares the nexus in developing countries with that in developed
counterparts, using data from subsamples of 34 developed countries and 83
developing countries. It measured volatility as variances of consumption in a
generalised autoregressive conditional heteroscedasticity (GARCH) model and
associated high volatility (variances) with poor consumption smoothing. The study
made use of the Two Stage Least Squares (2SLS) and General Methods of Moments
(GMM) estimation techniques to analyse the nexus due to the inherent endogeneity in
the relationship.

The study finds that saving rates have significantly reduced consumption
volatility in contrast to lending rates in the whole sample. However, lending rates
reduced consumption volatility in developed countries. This may be explained with
the lending rates in these countries. Saving rates did not reduce the volatility in
developed countries but had the potential of doing so. In developing countries
however, neither lending rates nor saving rates did reduce consumption volatility, and
this may be attributed to the high level of the rates in these countries. The developing
countries thus need to implement policies to reduce interest rates as a means to
reducing consumption volatility and maximising their welfare.

The rest of the paper is organised as follows. Section 2 reviews the relevant
literature while section 3 presents the theoretical and empirical framework. This
section also discusses the methodology employed. Section 4 discusses the findings
and section 5 rounds off with concluding remarks.

2. Literature Review

Consumption occupies a central role in the macroeconomy and that justifies
why several studies and theories are devoted to understanding its behaviour (Romer,
2012). Consumption explains a substantial portion of the aggregate demand in any
economy; hence any influence on consumption expenditure has significant effect on
economic output. One of the earlier theories on consumption is the Keynesian
fundamental psychological law of consumption that postulates consumption as
linearly dependent on current income (Mankiw, 2002). The implication of this theory
is that consumption is limited to current disposable income (Attanasio and Webber, 2010) as described by the Keynesian consumption function in the equation (1) below:

\[ C_t = c_o + c_1 Y_t^d \]  

(1)

Where

\[ C_t = \text{consumption at time } t; \]  
\[ c_o = \text{autonomous consumption} \]  
\[ c_1 = \text{marginal propensity to consume; } \]  
\[ Y_t^d = \text{disposable income at time } t \]  

Equation (1) implies that income-consumption deficit may not arise until income is nil, the shape of consumption path is determined by income; thus, external financing options for consumption-smoothing is non-existent. These implications however, established in the post-Keynesian consumption literature are not realistic.

Several studies have shown that the Keynesian theory of consumption does not fully describe consumption behaviour because consumers dislike bulges in their marginal utility (Romer, 2012). They smooth their consumption path by relating consumption to expected long-term income. The average value of the present value of life-time income streams, which is consumed, is called the permanent income. This behaviour informs the postulation of life-cycle and permanent income models by Modigliani and Brumberg, (1954; 1980) and Friedman (1957) respectively. These models postulate that permanent income, other than current income, determines consumption in a way presented in equation (2) below (Attanasio and Webber, 2010; Romer, 2012; Obstfeld and Rogoff, 1996).

\[ C_t = \frac{r}{1+r} \left( A_t + \sum_{k=0}^{\infty} \left( E(Y_{t+k} | I_t) \right) \right) \]  

(2)

where

\[ r = \text{interest rate}; \]  
\[ A_t = \text{financial asset at time } t; \]  
\[ I_t = \text{information available at time } t; \]  
\[ \text{Others } = \text{as earlier defined.} \]

Equation (2) shows that the consumer, in allocating resources across periods to maximise lifetime utility, consumes only a constant return on the present value of all
the lifetime resources comprising the initial assets and labour income (assumed
invested on a financial market). The R.H.S of equation (2) shows that consumption is
a constant fraction of lifetime resources, the permanent income for each period in the
consumer’s lifetime. This supports Hall’s (1978) findings presented in equation (3)
below:

\[ \langle E(C_{t+1} | I_t) \rangle = C_i \]  \hspace{1cm} (3)

which, under assumption of rational expectation becomes equation (4) below

\[ C_{t+1} = C_i + \varepsilon_i, \quad \langle E(\varepsilon_i | I_t) \rangle = 0 \]  \hspace{1cm} (4)

This implies that current income-consumption deficits and surpluses are bound
to occur and the consumer only needs to save the surplus in financial assets or borrow
against the future income to finance the deficit.

The propensity of a consumer to acquire financial assets in which to save the
surplus and/or obtain finance as a means of smoothing his consumption path depends
on the efficiency of the financial market as well as its depth. Where the market is
dominated by the banking sector, consumption smoothing may depend on
lending/credit facilities, interest rates (lending and saving rates) offered on banking
products.

This is evident in equation (2) and its first difference (equation (5) below)
consumption and its change is sensitive interest rates in the financial market.

\[ \Delta C_{t+1} = \frac{r}{1 + r} \sum_{k=0}^{\infty} \frac{r}{(1 + r)^k} \times \left[ \langle E(Y_{t+k+1} | I_{t+1}) \rangle - \langle E(Y_{t+k+1} | I_t) \rangle \right] \]  \hspace{1cm} (5)

This sensitivity of consumption to interest rates and its variants (the saving rate
and the lending rate) has received limited attention though, both in the theoretical
and the empirical literature. Yet, the sensitivity of consumption to change in income has
been largely considered. Diebold and Rudebusch (1991), using Autoregressive
Fractionally Integrated Moving Average (ARFIMA) analysed the relationship
between consumption volatility and income fluctuation. Consumption was found to
be less volatile than income and this led to the conclusion, as earlier documented in
the literature, that consumption is smoother than predicted by the Permanent Income
Hypothesis (PIH), which posits that consumption volatility (changes) would be larger than income volatility.

Heathcote and Perri (2015) consider a relationship between consumption and wealth (long term/accumulated income). Anticipated decline in the former (due to unfavourable macroeconomic climate, especially unemployment) is theoretically and empirically shown to increase precautionary saving and reduce consumption. The decline in consumption in response to declined wealth or asset value (prices) is shown to be larger for low-wealth households than high-wealth households. This is noted to suggest that consumption spending is sensitive to risk of decline in streams of consumption-financing resource (labour income/wealth). The authors did not however draw a line between the decline in aggregate prices that drive down households’ wealth and interest rates. Decline in asset prices would naturally raise real interest rates and this may drive up the saving rates demanded by depositors and interest rate charged by banks on lending. The large borrowing costs may impose borrowing constraints on consumers, reinforce decline in consumption spending when asset prices fall (in addition to precautionary saving effects) and worsen consumption volatility.

Challe and Ragot (2015) underscore the role of incomplete markets and lack of complete insurance from unemployment risk in the consumption volatility. In response to uninsured employment risks, households raise precautionary wealth by cutting individual consumption more. The engendered precautionary saving increase consumption volatility as cut in consumption is larger than anticipated decline in income.

Bhattacharya and Patnaik (2015) identify that financial development following a reform worsens consumption volatility in emerging economies unlike its effects in developed economies. They argue that the development increases the share in the economy of Ricardian households which respond to shock to permanent (trend) productivity or expected income by varying consumption more than change in current income. The share in the economy of Ricardian households increases with rise in financial development as the financially constrained households get access to finance. While agreeing with Resend (2006) that consumption volatility is higher in emerging economies than developed counterparts, Bhattacharya and Patnaik (2015) emphasize that endogenous borrowing constraints may cause consumption volatility and its relaxation through improved access to finance (due to financial reform) may also exacerbate the volatility.

Dogra and Gorbachev (2015) however note that financial liberalisation in the United States did not increase the share of financially unconstrained households; rather the ratio of the financially constrained households to the financially
unconstrained ones slightly rose between 1980 and 2007. Consumption volatility also rose over this period. Their findings suggest that liquidity constraints determine consumption volatility in developed economies, as a higher probability of being denied credit (access to finance) has strong effects on consumption volatility than income volatility does. The engendered volatility is also established to bear grave implications for welfare.

Attanasio and Paiella (2011) noted that costs of creating and managing financial asset portfolio discourage consumers and undermine their ability to manage their income risk and optimise their utility. Guo and Stepanyan (2011) documented that while deposit rates and discount rates negatively affect credit growth (credit availability), domestic deposit growth and foreign deposit growth, lagged GDP growth and inflation positively affect credit growth. Georgievska et al. (2011) argue that the interest rate on lending is significantly affected by bank size and market shares and to a lower extent by deposit rate and non-performing loans. In addition, both domestic rate and foreign rates are also found to exert significant influence on the lending rate.

While most strands of the literature agree that liquidity constraints underlie consumption volatility, limited attention has been paid to the influence of interest rates (especially the lending rate) on liquidity constraints and consumption volatility. Little is known about how high the lending rate in developing economies, relative to that in developed countries, may discourage borrowing and constitute or impose liquidity constraints.

3. Theoretical and Empirical Framework

This section presents the theoretical framework within which the nexus between interest rates and consumption volatility is analysed. The empirical framework for estimating the nexus and the estimation techniques are also highlighted.

3.1. The model

The representative consumer solves the problem presented in equations (6) to (8) below:

\[
Max \sum_{s=t}^{T=t} \beta^{s-t} u(C_s)
\]

Subject to
\[ W_{s+1} - D_{s+1} = W_s(1 + r_s^S) - D_s + \left[Y_s - (C_s + r_s^L D_s)\right] \]

\[ W_T - D_T \geq 0 \]

\(C_s = \) consumption at time \(s\), approximated by aggregate consumption per capita;

\(u(\cdot) = \) instantaneous utility function;

\(\beta = \) discount factor;

\(Y_s = \) income at time \(s\), approximated by gross domestic product (GDP)\(^5\) per capita;

\(B_s = \) credit (borrowings) assessed from the bank at time, approximated by aggregate credit per capita;

\(r_s^S = \) saving rate on deposit;

\(r_s^L = \) lending rate at time \(s\);

\(W_s = \) wealth at time \(s\);

\(L_t = \) present value of financial liability created from borrowings;

\(D_s = \) total debt or borrowing at time \(s\).

Equation (6) is the present value of utility function being maximised within the budget constraint presented in equation (7). Equation (7) is the budget constraint: it explains net wealth accumulation (difference between financial assets \(W\) and financial liabilities \(D\) in a period) in terms of existing net wealth and saving in the previous period. Net wealth in a period is the sum of the last period wealth and saving in the current period (the excess of income over consumption and interest payment on debt, \(r_s^L D_s\)). Equation (8) indicates that the consumer does not leave behind debt.

Expressing equation (7) in terms of consumption and substituting the result in equation (6) represents the problem in the unconstrained form below:

\[
\text{Max} \sum_{s=t}^{T-1} \beta^{s-t} u(Y_s - r_s^L D_s + W_s (1 + r_s^S) - W_{s+1} + D_{s+1} - D_s)
\]

The first order conditions for the maximisation problem with respect to \(W_{s+1}\) and \(D_{s+1}\) yield the following Euler equation that must hold for every \(s \geq t\).
On rearrangement and imposition of the inanda conditions, equation (10) and (11) yield:

\[
\frac{C_{s+1}}{C_s} = \beta(1 + r_s^S)
\]  

(12)

\[
\frac{C_{s+1}}{C_s} = \beta(1 + r_s^L)
\]  

(13)

Equations (12) and (13) show that the higher the saving rates and lending rates, the higher the consumption growth. Higher saving rates induce consumers to delay present consumption; hence the future consumption is larger. This tends to widen consumption level at two different periods. On the other hand, higher lending rates discourage consumers to reallocate consumption from the future to the present through borrowing today and paying back tomorrow. Consumption levels at two different periods thus widen. This limits their ability to smooth their consumption path and maximise their welfare.

3.2. Empirical Framework

Consumption growth, or change in consumption levels of a consumer over time has been theoretically shown to be influenced by discount rates, saving rates, lending rates, and income (see equations 5, 12 and 13 above). Thus, we model change or growth in consumption in country \(i\) and year \(s\), for estimation purpose, as follows:

\[
\frac{C_{i,s+1}}{C_{i,s}} = f(r_{i,s}^S, r_{i,s}^L, GDP_{i,s})
\]  

(14)
where
\[ \frac{C_{i,s+1}}{C_{i,s}} = \text{change or growth in consumption per capita in country } i \text{ and year } s; \]
\[ r_{i,s}^S = \text{saving rate in country } i \text{ and year } s; \]
\[ r_{i,s}^L = \text{lending rate in country } i \text{ and year } s; \]
\[ GDPC_{i,s} = \text{income per capita in country } i \text{ and year } s; \]

Subscript \( i \) and \( s \) denotes the cross-section (country) and time period.

Similarly, consumption volatility, \( \sigma^c_{i,s} \), which relates to changes or variation in consumption would be influenced by these determinants. The relationship is presented in equation (15) below:

\[ \Rightarrow \sigma^c_{i,s} = f(r_{i,s}^S, r_{i,s}^L, GDPC_{i,s}) \quad (15) \]

where \( \sigma^c_{i,s} \) is measured as variance in the generalised autoregressive conditional heteroscedasticity (GARCH) model specified in (16) below.

\[ \sigma^c_{i,s} = \phi + \phi \sigma^c_{i,s-1} + \gamma \sigma^c_{i,s-1} \]
\[ C_{i,s} = \eta + \delta C_{i,s-1} + u_{i,s} \quad (16) \]

where \( \phi, \phi, \gamma \text{ and } \delta > 0 \) are parameters;
\( C = \text{consumption per capita}; \)
\( u = \text{residuals in consumption autoregressive equation}. \)

The saving rate is determined through the interaction of demand for saving deposit and its supply. Therefore, the saving rate can be written as a function of its determinants.

\[ r_{i,s}^S = f(DD_{i,s}, SD_{i,s}) \quad (17) \]
where
\( r_{i,s}^S \) = saving rate;
\( DD_{i,s} \) = credit, proxying (indirect) demand for saving deposit;
\( SD_{i,s} \) = saving deposit, proxying supply of saving deposit;

The lending rate too is influenced by the demand for saving deposit and its supply.

\[ r_{i,s}^L = f(DD_{i,s}, SD_{i,s}) \]  

where
\( r_{i,s}^L \) = lending rate in country;
others = as earlier defined.

Internalising equations (17) and (18) in a linear representation of equation (15) gives equation (19) below:

\[ \sigma_{i,s} = \alpha_0 + \alpha_1 \ln r_{i,s}^S + \alpha_2 \ln r_{i,s}^L + \alpha_3 GDPC_{i,s-1} + \alpha_4 \ln DDC_{i,s} + \alpha_5 \ln SDC_{i,s} + \epsilon_{i,s} \]  

where
\( DDC_{i,s} \) = credit per capita;
\( SDC_{i,s} \) = saving deposit per capita.

The effects of lending and saving rates on consumption volatility are examined by estimating equation (19) for the whole sample of 117 countries. The equation is also estimated for developed and developing countries subsamples for reason of comparing the nexus in the broad categories of countries.

3.3. Estimation techniques

A number of explanatory variables in Equation (19) are endogenous. Estimating the equation with Ordinary Least Squares (OLS) would yield biased and, in many cases, inconsistent estimators. The endogeneity problem is circumvented with use of system General Method of Moments (GMM) and two stage Least Squares (2SLS).
4. Data and Preliminary Analysis

Consumption per capita \((\text{CONSC})\) is measured as the ratio of household final consumption expenditures to population, volatility of consumption per capita, \(\sigma\), is measured as GARCH variances of \(\text{CONSC}\); income per capita \((\text{GDPC})\) as ratio of Gross Domestic Product per capita to population, lending rate \((\text{LENDRATE})\) as interest rate charged on loans or credit by commercial banks, saving rate \((\text{SAVRATE})\) as rate on saving deposit, credit per capita \((\text{CREDITC})\) as ratio of credit granted by the banking sector to population, saving per capita \((\text{SAVC})\) as ratio of gross domestic saving to population. Data on the underlying variables are collected from the World Bank’s Global Development Finance database while those on population are obtained from IMF’s World Economic Outlook.

4.1. Descriptive analysis and statistics

Table 1 below presents the descriptive statistics of the data in the whole sample and the subsamples of developing and developed countries. The data show wide range (difference between maximum values and the minimum values) reflecting heterogeneity of the sample. The variations justify the use of panel data estimation techniques (Mobolaji, 2008) as they allow for more efficient estimation of parameters (Baltagi, 2008).

<table>
<thead>
<tr>
<th></th>
<th>Whole sample of 117 countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\sigma) ((\text{CONSC}))</td>
<td>Mean 1175009.</td>
</tr>
<tr>
<td></td>
<td>Median 53953.30</td>
</tr>
<tr>
<td></td>
<td>Maximum 3.00E+08</td>
</tr>
<tr>
<td></td>
<td>Minimum 0.164800</td>
</tr>
<tr>
<td></td>
<td>Std. Dev. 6402873.</td>
</tr>
<tr>
<td></td>
<td>Skewness 30.85439</td>
</tr>
<tr>
<td></td>
<td>Kurtosis 1289.365</td>
</tr>
<tr>
<td>\text{CONSC}</td>
<td>Mean 4173.263</td>
</tr>
<tr>
<td></td>
<td>Median 937.1780</td>
</tr>
<tr>
<td></td>
<td>Maximum 47381.30</td>
</tr>
<tr>
<td></td>
<td>Minimum 71.2200</td>
</tr>
<tr>
<td></td>
<td>Std. Dev. 17.17667</td>
</tr>
<tr>
<td>\text{LENDRATE}</td>
<td>Mean 13.99088</td>
</tr>
<tr>
<td></td>
<td>Median 5.000000</td>
</tr>
<tr>
<td></td>
<td>Maximum 682.3000</td>
</tr>
<tr>
<td></td>
<td>Minimum 0.010000</td>
</tr>
<tr>
<td>\text{SAVRATE}</td>
<td>Mean 1428511.</td>
</tr>
<tr>
<td></td>
<td>Median 98.96910</td>
</tr>
<tr>
<td></td>
<td>Maximum 1.80E+08</td>
</tr>
<tr>
<td></td>
<td>Minimum 1.016700</td>
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<tr>
<td>\text{CREDITC}</td>
<td>Mean 2384.121</td>
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<td></td>
<td>Median 301.6020</td>
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<td>Minimum 79.72770</td>
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<td>\text{GDPC}</td>
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<tr>
<td></td>
<td>Median 301.6020</td>
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<tr>
<td></td>
<td>Maximum 204075.0</td>
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<tr>
<td></td>
<td>Minimum 1.18530</td>
</tr>
</tbody>
</table>

Table 1
Subsample of 34 developed countries

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Jarque-Bera</th>
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<td>CONSC</td>
<td>3235766.2</td>
<td>11049.42</td>
<td>3.00E+08</td>
<td>60.84220</td>
<td>10475352</td>
<td>21.08449</td>
<td>568.0700</td>
<td>15411954</td>
</tr>
<tr>
<td>LENDRATE</td>
<td>12.56449</td>
<td>11049.42</td>
<td>91.84000</td>
<td>0.500000</td>
<td>45.07737</td>
<td>0.869108</td>
<td>3.490764</td>
<td>1565879</td>
</tr>
<tr>
<td>SAVRATE</td>
<td>7.154668</td>
<td>11049.42</td>
<td>88.29400</td>
<td>0.010000</td>
<td>45.07737</td>
<td>1.43647</td>
<td>8.197773</td>
<td>1.72247</td>
</tr>
<tr>
<td>CREDITC</td>
<td>4910076.4</td>
<td>9511.105</td>
<td>902529.5</td>
<td>0.000000</td>
<td>3.646600</td>
<td>6.342142</td>
<td>92454000</td>
<td>902529.5</td>
</tr>
<tr>
<td>SAVC</td>
<td>5066.401</td>
<td>7.464850</td>
<td>1.80E+08</td>
<td>0.000000</td>
<td>3.646600</td>
<td>6.342142</td>
<td>92454000</td>
<td>902529.5</td>
</tr>
<tr>
<td>GDPC</td>
<td>58404.84</td>
<td>3.564600</td>
<td>57707.60</td>
<td>0.000000</td>
<td>3.646600</td>
<td>6.342142</td>
<td>92454000</td>
<td>902529.5</td>
</tr>
</tbody>
</table>

Subsample of 83 developing countries

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Std. Dev.</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Jarque-Bera</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSC</td>
<td>331971.8</td>
<td>1360.291</td>
<td>2.00E+08</td>
<td>0.164800</td>
<td>3233812</td>
<td>37.05225</td>
<td>1647356</td>
<td>15411954</td>
</tr>
<tr>
<td>LENDRATE</td>
<td>19.06347</td>
<td>1360.291</td>
<td>824.56000</td>
<td>71.22000</td>
<td>2432.665</td>
<td>4.080079</td>
<td>74.14670</td>
<td>143400.35</td>
</tr>
<tr>
<td>SAVRATE</td>
<td>16.78751</td>
<td>1360.291</td>
<td>682.3000</td>
<td>4.730800</td>
<td>103.2017</td>
<td>51.92033</td>
<td>2432.665</td>
<td>143400.35</td>
</tr>
<tr>
<td>CREDITC</td>
<td>4234.809</td>
<td>1360.291</td>
<td>759644.0</td>
<td>0.281700</td>
<td>326.9120</td>
<td>51.92033</td>
<td>2432.665</td>
<td>143400.35</td>
</tr>
<tr>
<td>SAVC</td>
<td>1286.825</td>
<td>5.643850</td>
<td>204075.0</td>
<td>1.016700</td>
<td>39.28610</td>
<td>51.92033</td>
<td>2432.665</td>
<td>143400.35</td>
</tr>
<tr>
<td>GDPC</td>
<td>2166.511</td>
<td>5.643850</td>
<td>59018.70</td>
<td>1.18530</td>
<td>39.28610</td>
<td>51.92033</td>
<td>2432.665</td>
<td>143400.35</td>
</tr>
</tbody>
</table>

Source: Author’s computation

All the variables are positively skewed in all the samples; however skewness is largest in the developing countries subsample, followed by the whole sample, and then the developed countries subsample. This suggests that developing countries
subsample is least balanced in terms of composition: a few countries in the subsample are so large that the mean of the variables are far greater than their median values, when compared to the other subsample. This reflects in the kurtosis of the variables in the sample and the subsamples: the variables in developing countries are more leptokurtic than the samples which are even more leptokurtic than the developed countries counterparts.

The mean of the variables, with exception of lending rates and saving rates, are the largest in developed countries, followed by the whole sample and the developing countries subsamples. This shows that developed countries are economically larger, on average, than developing counterparts. The lending rates and saving rates are however the least in developed countries subsample than the other subsample. This is not surprising as the rates are outcomes of the interaction between supply of funds or savings (SAVC) and its demand or credit (CREDITC). Supply of funds (SAVC), on average, is the largest in developed countries and this explains why the average saving rates is the lowest. The saving rates are proportional to the saving of funds supply in the subsample; and this extends to the lending rate as saving rates inform lending rates.

4.2. Unit roots analysis and statistics

The unit roots property of the data employed is highlighted in table 2 below. The table presents the statistics from various unit roots tests. Some of the tests assume common unit root across the cross-sections while others assume individual unit roots. Those assuming common unit roots include the Lin, Levin and Chu (LLC) panel unit root test and the Breutang (BRE) panel unit root test. Those that assume individual unit roots include Ims, Pesharan and Shin (IPS), Augmented Dickey-Fuller (ADF) and Philips and Perron (PP) tests. Most of the tests show that variance of consumption, lending rates and saving rates are I(0) while CREDITC, SAVC and GDPC are I(1) in the whole sample and the subsamples.
### Table 2

#### Unit roots statistics

<table>
<thead>
<tr>
<th>Series</th>
<th>Whole sample of 117 countries</th>
<th>Subsample of 34 developed countries</th>
<th>Subsample of 83 developing countries</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>common unit root process assumed</td>
<td>Individual unit root process assumed</td>
<td>common unit root process assumed</td>
</tr>
<tr>
<td></td>
<td>LLC</td>
<td>BRE</td>
<td>IPS</td>
</tr>
<tr>
<td>(CONSC)</td>
<td>-12.4** -24.4**</td>
<td>-12.6** -7.28**</td>
<td>-15.3** -42.3**</td>
</tr>
<tr>
<td>LENDRATE E</td>
<td>-12.8** -23.1**</td>
<td>-1.04 -15.3**</td>
<td>-4.20** -15.4**</td>
</tr>
<tr>
<td>SAVRATE</td>
<td>-7.85** -17.3**</td>
<td>-4.11** -13.1**</td>
<td>-6.13** -17.9**</td>
</tr>
<tr>
<td>CREDITC</td>
<td>14.5 -18.5**</td>
<td>13.5 11.2</td>
<td>7.27 -9.22**</td>
</tr>
<tr>
<td>SAVC</td>
<td>-2.10* -21.0**</td>
<td>3.03 -2.23*</td>
<td>-2.60** -29.4**</td>
</tr>
<tr>
<td>GDPC</td>
<td>1.36 -24.7**</td>
<td>3.51 -15.2**</td>
<td>4.59 -23.5**</td>
</tr>
</tbody>
</table>

*, ** indicate 5% and 1% degree of statistical significance

**Source:** Author’s computation.
The outcomes of the tests necessitate further diagnostic tests: cointegration analysis. There is need to find if there exists a long run relationship between the variables. If the variables are cointegrated, the relationship between the variables may be analysed with appropriate regression techniques.

4.3. Cointegration analysis and statistics

The existence of long run relationships between the variables is tested by using three cointegration tests: Johansen-Fisher test, Pedroni test and Kao tests. All the tests affirm that long run or cointegrating relationships exist between the variables in the whole sample and the subsamples. Table 3 below presents the statistics from the three tests under different assumptions.

Table 3

Cointegration statistics

<table>
<thead>
<tr>
<th>Variables in cointegration vector</th>
<th>Johansen-Fisher</th>
<th>Pedroni</th>
<th>Kao</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H0: r = 0</td>
<td>Intercept, no trend in CE &amp; VAR</td>
<td>Intercept &amp; trend in CE &amp; VAR</td>
</tr>
<tr>
<td></td>
<td>$\sigma$ (CONSC)</td>
<td>No Intercept, no trend in CE &amp; VAR</td>
<td>Intercept &amp; trend in CE &amp; VAR</td>
</tr>
<tr>
<td></td>
<td>1735**</td>
<td>1080**</td>
<td>1543**</td>
</tr>
<tr>
<td></td>
<td>1133**</td>
<td>769**</td>
<td>1147**</td>
</tr>
<tr>
<td></td>
<td>704**</td>
<td>503**</td>
<td>743**</td>
</tr>
<tr>
<td></td>
<td>398**</td>
<td>298**</td>
<td>621**</td>
</tr>
<tr>
<td></td>
<td>232**</td>
<td>206**</td>
<td>381**</td>
</tr>
<tr>
<td></td>
<td>150**</td>
<td>151**</td>
<td>367**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ibrahim Alley.
Interest Rates And Consumption Volatility: Any Implications For Consumption Smoothing?

Subsample of 34 developed countries

<table>
<thead>
<tr>
<th>Variables in cointegration vector</th>
<th>Johansen-Fisher</th>
<th>Pedroni</th>
<th>Kao</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Intercept, no trend in CE &amp; VAR</td>
<td>Intercept &amp; trend in CE &amp; VAR</td>
<td>stat</td>
</tr>
<tr>
<td>$\sigma$ (CONSC) $r = 0$</td>
<td>$332^{**}$</td>
<td>$698^{**}$</td>
<td>$223^{**}$</td>
</tr>
<tr>
<td></td>
<td>$r \leq 1$</td>
<td>$332^{**}$</td>
<td>$150^{**}$</td>
</tr>
<tr>
<td>LENDRATE $r \leq 2$</td>
<td>$210^{**}$</td>
<td>$912^{**}$</td>
<td>$262^{**}$</td>
</tr>
<tr>
<td>SAVRATE $r \leq 3$</td>
<td>$77.7^{**}$</td>
<td>$173^{**}$</td>
<td>$225^{**}$</td>
</tr>
<tr>
<td>CREDITC $r \leq 4$</td>
<td>$38.9^{**}$</td>
<td>$89.7^{**}$</td>
<td>$113^{**}$</td>
</tr>
<tr>
<td>SAVC $r \leq 5$</td>
<td>$25.4^{**}$</td>
<td>$56.0^{**}$</td>
<td>$101^{**}$</td>
</tr>
<tr>
<td>GDPC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subsample of 83 developing countries

<table>
<thead>
<tr>
<th>Variables in cointegration vector</th>
<th>Johansen-Fisher</th>
<th>Pedroni</th>
<th>Kao</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Intercept, no trend in CE &amp; VAR</td>
<td>Intercept &amp; trend in CE &amp; VAR</td>
<td>stat</td>
</tr>
<tr>
<td>$\sigma$ (CONSC) $r = 0$</td>
<td>$1403^{**}$</td>
<td>$875^{**}$</td>
<td>$1320^{**}$</td>
</tr>
<tr>
<td></td>
<td>$r \leq 1$</td>
<td>$801^{**}$</td>
<td>$552^{**}$</td>
</tr>
<tr>
<td>LENDRATE $r \leq 2$</td>
<td>$493^{**}$</td>
<td>$332^{**}$</td>
<td>$490^{**}$</td>
</tr>
<tr>
<td>SAVRATE $r \leq 3$</td>
<td>$320^{**}$</td>
<td>$234^{**}$</td>
<td>$396^{**}$</td>
</tr>
<tr>
<td>CREDITC $r \leq 4$</td>
<td>$193^{**}$</td>
<td>$169^{**}$</td>
<td>$268^{**}$</td>
</tr>
<tr>
<td>SAVC $r \leq 5$</td>
<td>$125$</td>
<td>$125$</td>
<td>$266^{**}$</td>
</tr>
<tr>
<td>GDPC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*, ** indicate 5% and 1% degree of statistical significance
Source: Author’s computation.
Both the trace test and the eigen-value statistics of Johansen-Fisher test under the assumption that the long run relationship is devoid of intercept and trend show that there is at least five cointegrating relationship between the variables. The statistics under the alternative assumption that the cointegrating relationship has both intercept and trend also established no less than five cointegrating relationships. Most of the Pedroni test statistics under the three different assumptions (i. that the cointegrating relationships have intercept but no trend, ii. that they have both intercept and trend, iii. that they neither have intercept nor trend) are significant at 5% or less because they are larger than the critical (absolute) value of 1.64 (Asteriou and Hall, 2007), and thus affirm cointegration between the variables. Kao cointegration test does not disagree with other tests.

5. Empirical evidence

This section discusses the results from the empirical analysis of the effects of lending rates and saving rates on consumption volatility. It also analyses their implication for consumption smoothing and intertemporal utility maximisation. The nexus is examined in a sample of 117 countries and 2 subsamples: one with 34 developed countries and the other with 83 developing countries.

5.1. Consumption Volatility and Interest Rates

The effects interest rates on consumption volatility in the sample of 117 countries are presented in table 4 below. The table also highlights the effects of credit, saving and income (GDP) on consumption volatility. Both the 2SLS and GMM models perform satisfactorily in explaining consumption volatility as the Wald statistics are statistically significant. Other statistics for the GMM model also indicate satisfactory performance: the Sargan test statistic did not reject the null that over-identifying restrictions are valid while the absence of second order autocorrelation shows that the GMM estimators are consistent (Arellano and Bond, 1991; Baltagi, 2005).

Lending rate did not reduce consumption volatility and neither does evidence show that it worsens it. Both 2SLS and GMM models report statistically insignificant negative effects of the rates on consumption volatility. This suggests that consumers are not encouraged by lending rate to borrow to smooth their consumption and shield it from income volatility; hence, the rate did not significantly mitigate consumption volatility. However, there is potential for the rate to reduce the volatility as evidence shows that the rate did not worsen the volatility at all: only that the consumption-
smoothing effects of the rate are statistically insignificant. One reason for this result is that lending rate is generally high: the mean and the median lending rate in the 117 countries sampled are 17.2% and 11.0% respectively (see table 1 above). The double digit median rate can discourage consumption borrowing because repayment will reduce the future income and consumption6.

Saving rates significantly reduced consumption volatility. The 2SLS and GMM estimators are negative and statistically significant. These results suggest that consumers are responsive, and not averse, to saving rates in smoothing their consumption path. The rates are not too low to discourage saving in a period of income surplus. The mean and median saving rates in the sampled countries, as shown in table 1 above, are 13% and 5.0% respectively. Neither are they too high to encourage savings that would cause fluctuations of marginal utility of consumption.

Saving however did worsen consumption volatility and this result suggests that saving had not created enough buffers by which the consumption may be smoothed. On the other hand, evidence from the 2SLS model shows that credits obtained from banks reduced consumption volatility at 10% level of statistical significance while the estimates from the GMM model only indicate that credit only had the potential to smooth consumption and reduce its volatility.

Table 4

<table>
<thead>
<tr>
<th>Consumption volatility and Interest (all the countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable:</strong> Consumption volatility</td>
</tr>
<tr>
<td><strong>Explanatory Variables</strong></td>
</tr>
<tr>
<td>Volatility in the previous period</td>
</tr>
<tr>
<td>GDP</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Lending rate</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Saving rate</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Credit</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Saving</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
The GMM model shows that higher income is conducive to consumption smoothing as GDP reduced consumption volatility significantly. The model also shows that consumption volatility is persistent: volatility in one period induced consumption to be volatile in the subsequent period. The result suggests that it would take consumers some time to attain their optimal inter-temporal consumption path once consumption is perturbed.

5.2. Consumption volatility and interest rates in developed countries

Table 5 shows that lending rates reduced consumption volatility in developed countries unlike in the whole sample. This result is not surprising because the mean and median lending rates in developed countries of 12.6% and 7.5% respectively are much lower than those of the whole sample of 17.2% and 11.0% respectively (see table 1 above). The low lending rates in the developed countries did not discourage borrowing for income smoothing. Results from the 2SLS and GMM confirm this as they show that lending rates significantly reduced consumption volatility at 10% and 1% respectively.

Saving rates did not however reduce volatility of consumption spending and neither did they worsen it. That the rates did not reduce consumption volatility may not be unconnected to its low values, relative to those in whole sample of countries: the mean and the median saving rates in developed countries are 7.2% and 3.6% respectively while those of the whole sample 13% and 5% respectively. Consumers in the developed countries may not thus be encouraged to save enough in periods of income surplus due to lower rates; hence the rates did not conduce to lowering consumption volatility.
Evidence from the GMM supports that saving in developed countries reduced consumption volatility and is thus conducive to consumption smoothing and inter-temporal utility maximisation. This effect of saving on consumption volatility is statistically significant at 5%. The 2SLS model however suggests otherwise and this contradictory result is only significant at 10%. Also, both the 2SLS and GMM estimators did not report credit or bank lending to consumers as worsening volatility.

Table 5

Consumption volatility and interest rates in developed countries

<table>
<thead>
<tr>
<th>Dependent Variable: Consumption volatility</th>
<th>2SLS</th>
<th>Sys. GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Explanatory Variables</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility in the previous period</td>
<td>-0.113***</td>
<td>-0.102***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.125*</td>
<td>-0.102***</td>
</tr>
<tr>
<td></td>
<td>(0.064)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Lending rate</td>
<td>-0.212*</td>
<td>0.425***</td>
</tr>
<tr>
<td></td>
<td>(0.065)</td>
<td>(0.001)</td>
</tr>
<tr>
<td>Saving rate</td>
<td>-0.049</td>
<td>0.095</td>
</tr>
<tr>
<td></td>
<td>(0.480)</td>
<td>(0.252)</td>
</tr>
<tr>
<td>Credit</td>
<td>0.243</td>
<td>-0.003</td>
</tr>
<tr>
<td></td>
<td>(0.558)</td>
<td>(0.573)</td>
</tr>
<tr>
<td>Saving</td>
<td>0.085*</td>
<td>-0.025**</td>
</tr>
<tr>
<td></td>
<td>(0.052)</td>
<td>(0.012)</td>
</tr>
<tr>
<td>Constant</td>
<td>11.23</td>
<td>-0.0081</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.373)</td>
</tr>
</tbody>
</table>

*Estimation Statistics*

<table>
<thead>
<tr>
<th></th>
<th>2SLS</th>
<th>Sys. GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wald $\chi^2$ statistics</td>
<td>86.76***</td>
<td>9205.4***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Sargan test Stat.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>27.64</td>
<td>27.64</td>
</tr>
<tr>
<td></td>
<td>(1.000)</td>
<td>(1.000)</td>
</tr>
<tr>
<td>Autocorr. test (1st order)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-2.208**</td>
<td>-2.208**</td>
</tr>
<tr>
<td></td>
<td>(0.038)</td>
<td>(0.038)</td>
</tr>
<tr>
<td>Autocorr. test (2nd order)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.098</td>
<td>1.098</td>
</tr>
<tr>
<td></td>
<td>(0.272)</td>
<td>(0.272)</td>
</tr>
<tr>
<td>No of countries</td>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>

All variables in natural logarithms, and in per capita except the interest rates
*; ** and *** indicate 10%, 5% and 1% degree of statistical significance

Source: Author’s computation.
As in the whole sample, income mitigates consumption volatility in developed countries: results from both the 2SLS and GMM show statistically significant evidence for the inverse relationship between income and consumption volatility. These results indicate that higher income is conducive to consumption smoothing as GDP reduced consumption volatility significantly; they agree with the Keynesian theory that average propensity to consume (APC) declines with income. The lower the APC, the lower the consumption-income affinity and the lower the chances that income volatility drives consumption volatility. The effect of income on consumption smoothing is much stronger in developed countries than the whole sample. In addition, consumption volatility in one period did not worsen volatility in the subsequent periods.

5.3. Consumption volatility and interest rates in developing countries

Neither lending rates nor saving rates reduced consumption volatility in developing countries. Lending rates are high, with mean and median rates being 19.1% and 13.0% respectively. The high lending rates may discourage borrowing for consumption smoothing and hence worsen volatility. The saving rates too are relatively high and may have so distorted consumption-saving relationship that they no longer mitigate consumption volatility.

Saving and credits did not reduce consumption volatility in developing countries. Results from both the 2SLS and GMM estimations showed that saving increased consumption volatility at 10% significance while the 2SLS estimation provides the evidence the credit worsened the volatility at 1% level of statistical significance. These results may not be unconnected with the effects of lending and saving rates on consumption volatility.

Gross domestic product (GDP) did not reduce consumption volatility; rather, it worsens it. The 2SLS estimation shows that it increased the volatility at 1% significance. This may not be unconnected to the fact that incomes in developing economies are low, relative to the developed counterparts: the mean and median income per capita in developing countries are $2,167 and $584 respectively while those in developed countries are $58,404 and $12,464 respectively. The proportion of the income spent on consumption in developing economies may thus be so high that consumption may fluctuate significantly when income changes.
Ibrahim Alley.
Interest Rates And Consumption Volatility: Any Implications For Consumption Smoothing?

Table 6

**Consumption volatility and interest rates in developing countries**

<table>
<thead>
<tr>
<th></th>
<th>2SLS</th>
<th>Sys. GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables:</strong></td>
<td>Consumption volatility</td>
<td></td>
</tr>
<tr>
<td><strong>Explanatory Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility in the previous period</td>
<td>0.463***</td>
<td>-0.160***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.003)</td>
</tr>
<tr>
<td>GDP</td>
<td>-0.015</td>
<td>-0.179</td>
</tr>
<tr>
<td></td>
<td>(0.884)</td>
<td>(0.498)</td>
</tr>
<tr>
<td>Lending rate</td>
<td>-0.010</td>
<td>0.085</td>
</tr>
<tr>
<td></td>
<td>(0.892)</td>
<td>(0.713)</td>
</tr>
<tr>
<td>Saving rate</td>
<td>0.100***</td>
<td>0.009</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.630)</td>
</tr>
<tr>
<td>Credit</td>
<td>0.036*</td>
<td>0.064*</td>
</tr>
<tr>
<td></td>
<td>(0.071)</td>
<td>(0.097)</td>
</tr>
<tr>
<td>Saving</td>
<td>6.978***</td>
<td>8.789***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td><strong>Estimation Statistics</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald $\chi^2$ statistics</td>
<td>76.83***</td>
<td>27.08***</td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.000)</td>
</tr>
<tr>
<td>Sargan test Stat.</td>
<td></td>
<td>59.41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.461)</td>
</tr>
<tr>
<td>Autocorr. test (1st order)</td>
<td></td>
<td>-4.526**</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.000)</td>
</tr>
<tr>
<td>Autocorr. test (2nd order)</td>
<td></td>
<td>0.759</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.448)</td>
</tr>
<tr>
<td>No of countries</td>
<td>83</td>
<td>83</td>
</tr>
</tbody>
</table>

All variables in natural logarithms, and in per capita except the interest rates
* *, ** and *** indicate 10%, 5% and 1% degree of statistical significance

**Source:** Author’s computation.

6. Concluding remarks

The stochastic nature of earned income often leads to divergence of consumption (driven by total income) from its optimal path. To maximise utility,
consumers save and borrow at prevailing saving rates and lending rates respectively; and this enables them to smooth their consumption path and minimise utility-reducing fluctuations in consumption. Saving rates and lending rates may however influence saving and borrowing decisions, and their effects on consumption volatility.

This study examined the extent to which lending and saving rates conduce to consumption smoothing and, in extension, inter-temporal utility maximisation by analysing the effects of the rates on consumption volatility in a large sample of 117 countries, as well as subsamples of 34 developed countries and 83 developing countries. The inter-temporal utility maximisation framework was employed and both the 2SLS and GMM estimation techniques were used to analyse the nexus due to endogeneity.

Saving rates significantly affected intertemporal consumption of consumers in most economies. The potential of the rate to reduce consumption volatility in developed countries is however higher than in developing countries. By reducing the consumption fluctuations, the rates enhanced the ability of households to maximise their utility via consumption smoothing.

Lending rates did not significantly reduce consumption volatility in many economies. They however did in developed economies. The effect of lending rates on consumption volatility in developed economies may be due to the fact that the rates tend to be relatively lower in developed economies.

Governments of developing economies should thus implement policies that would reduce lending rates for consumers in such a way that the rates do not discourage borrowing. This would go way to reduce consumption volatility and maximise consumers’ welfare.

End Notes

1 This assumption embeds a situation where consumption includes bequest as a good from which the consumers derive utility assumption. It relies on local non-satiation condition for consumption goods, with more preferred to less as marginal utility of consumption is assumed to remain positive for all values, therefore justifying exhaustion of lifetime incomes.

2 The consumer is often constrained by socio-institutional arrangements from leaving behind debt; and this is manifested in the limit of credit he/she can obtain, conditional on his/her life-time wealth. The budget constraints must be satisfied and the consumer cannot consume more than his wealth. This is described as the ‘non-ponzi game’ situation.
3 Romer (2006) shows that in equilibrium, 
\[
\frac{C_{t+1}}{C_t} = \left( \frac{1 + r}{1 + \beta} \right)^{1/\theta}
\]
with \( C, r, B \), and \( \theta \) being consumption, interest (saving) rate, discount factor and elasticity of intertemporally substituting consumption in one period for another or allocating resources to consumption in different period. The higher the saving rate above the discount factor, the higher the saving rate as the consumption in today would be less than tomorrow.

4 The consumer is often constrained by institutional/economic from leaving behind debt; and this is manifested in the limit of credit he/she can obtain, conditional on his/her life-time wealth. The budget constraints must be satisfied and the consumer cannot consume more than his/her wealth. This is described as the ‘non-ponzi game’ situation.

5 Use of GDP per capita and aggregate consumption capita to represent income and consumption of representative consumers respectively follows Challe and Ragot (2013).

6 Consumption borrowings are assumed not to be invested. Thus there are no proceeds from any investment to finance interest (and principal) repayment. Thus, repayment only comes from future income and the latter is reduced by the former.

References


TAX REVENUE, SOCIAL WELFARE AND ECONOMIC GROWTH: EMPIRICAL EVIDENCE FROM NIGERIA

Tajudeen EGBETUNDE

JEL O10

Abstract

The paper investigates the role of tax revenue in the effect of social welfare on economic growth in Nigeria, for the period 1970-2013, using Vector Error Correction Model (VECM). The VECM results show that social welfare has a negative and significant impact on economic growth, while petroleum profit tax and value added tax mitigate the negative relationship. Using another component of tax revenue, the results further show that social welfare has a positive and significant impact on economic growth, while corporate income tax and custom and excise duty unfavourably affect the positive relationship in the country. These findings suggest that the government should use tax revenue judiciously to improve infrastructure supporting facilities and thus engender economic growth in Nigeria.

Keywords:
tax revenue, social welfare, economic growth, VECM, Nigeria.

1. Introduction

A tax is a fee charged or levied by a government on a product, income, or activity. If it is levied directly on personal or corporate income, it is called a direct tax. If it is levied on the price of a commodity or service, then it is called an indirect tax. The purpose of taxation is to finance government expenditure (that will improve social well-being of citizen) and to redistribute wealth which translates to financing development of the country (Ola, 2001, Jhingan, 2004, Musgrave and Musgrave, 2004, Bhartia, 2009). Whether the taxes collected are enough to finance the development of the country will depend on the needs of the country and countries can seek alternative sources of revenue to finance sustainable development (Adegbie and Fakile, 2011). Tax revenue is the receipt from tax structures. Revenues accruing to an economy, such as Nigeria, can be divided into two main categories, which are: Oil Revenue (includes revenue from royalties, Petroleum Profit Tax (PPT), gas tax) and Non-Oil revenue (includes trade, loans, direct and indirect taxes paid by other sectors of the economy, Aids, agriculture etc).

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Taxation is a veritable source of government revenue, it is as certain as death. However, it is still debatable in the literature the optimal taxation to be imposed to enhance development without unjustly inflicting welfare cost. Economic theories of taxation approach the question of how to minimise the loss of economic welfare through taxation and also discuss how a nation can perform redistribution of wealth in the most efficient manner. Unpopular taxes have been the cause for public protests, riots and even revolutions. Occasionally, extreme unpopular tax system may lead to a regime change. In political campaigns, candidates' views on taxation often determine their popularity with voters. Naiyeju (1996) reported that the success or failure of any tax depends on the extent to which it is properly managed. However, how tax affects growth has attracted the attention of many scholars over several decades. The empirical evidence obtained from these extensive studies has been mixed.

Tax revenue mobilization as a source for financing development activities in Nigeria has been a difficult issue primarily because of various forms of resistance, such as evasion, avoidance or corrupt practices associated with it. These activities are considered as sabotaging the economy and are readily presented as reasons for the underdevelopment of the country. Government exists in order to effectively collect taxes from available economic resources and make use of same to create economic prosperity such that available and willing human and other resources are gainfully employed, infrastructures provided, essential public services (such as the maintenance of law and order) put in place etc., tax resistance only makes these goods unattainable. Following some reasoning, changing or fine-tuning tax rates is used to influence or achieve macroeconomic stability. Some countries like the United States and United Kingdom, which derive substantial revenue from both direct and indirect tax, have used same to create prosperity (Oluba, 2008). In Nigeria the contribution of tax revenue in particular, has not met the expectations of the government. Government has equally expressed this disappointment and has accordingly vowed to expand the non-oil tax revenue.

The role that tax revenue plays on the nexus between growth and social welfare still remain a debated issue among scholars. This is definitely a new area in the context of Nigerian economy. However, this study examines the role that tax revenue plays on social welfare – growth nexus in Nigeria covering the period 1970 to 2013.

2. Literature Review

Padovano and Galli (2002) use the marginal tax rate as the best measure of impact of tax on economic growth. Using 25 industrialized countries from 1970 to
1998, Padovano and Galli (2002) exemplified that there are negative impact of marginal tax rates and tax progressivity on economic growth. Conversely, average taxation shows that there is no effect on output growth because it is highly correlated with average fiscal spending.

In addition, Poulson and Kaplan (2008) following the work of Padovano and Galli (2002) use the marginal tax rates to examine the impact of taxes on economic growth. They estimated over the period from 1963 to 2004 by using the aggregate U.S. time series data, and find out that higher marginal tax rates had a negative impact on the economic growth in the states. The negative coefficient on the marginal tax rate is -0.374. This value is larger than other researchers’ results and accounts for a greater share of economic growth than those found in other studies because there are longer time periods covered by the present study.

Equivalently, Avila and Strauch (2008) concluded that taxation will negatively affect the economic growth. According to endogenous growth theory, taxation will affect investment decision and hence in turns of higher growth. When government imposes a higher tax rate, it will reduce the private investment and worsen the economic growth.

Lee and Gordan (2005), using the cross country data from 1970 to 1997, found that various measurement of the personal tax rate is not significantly associated with the economy growth. However, they found that corporate tax rate has a negative and significant effect on the growth of the economy, even after controlling other determinants of economic growth and it will speculatively affect the entrepreneur activity. A similar conclusion offered by Skinner (1988), examined the impact of corporate tax on the economic growth by using 31 Africa countries and shows that corporate tax will negatively affect the output growth.

Yakita (2003) using the overlapping generation model assumes that under a closed economy which populated by overlapping generation of two periods lived individual without bequest motive. The study showed that interest income taxation will not necessarily boost the economic growth. This is due to the reason that tax transferred was redistributed from the old generation with financial assets to the young without financial assets. So, lower after-tax interest rate will increase the present value of the second period wage income of the young generation. Besides, incentive to save will reduce when human capital transfer from the old generation to young generation is sufficiently large. Sonedda (2009) had encountered a negative relationship between labour income taxes and economic output. He used ECM (Error Correction Method) to separate the long run relationship from the short run dynamics.
The 15 OECD countries in this research did not come across any significant short run effect. However, there is a negative and significant long run relationship between the change in labour income taxes and economic output statistically robust. This may lead us to the conclusion that income tax will affect the economic growth permanently.

Consequently, Chin and Lai (2009) set up a two-sector endogenous growth model with new generation compared to the increase in the labour income tax rate, the total tax revenues and lump-sum transfers decreases and equally distributed among generations, and concluded that tax rate on the labour income will have a negative impact on the economic growth. Wang and Yip (1992) examine the effect of consumption taxes, taxes on capital and on various factors of output for Taiwanese economy. The finding is that consumption taxes and factor income taxes (factor taxation) have opposing and mutually off-setting effect on growth rates of economic aggregates. Burgess and Stern (1993) elucidate that impediments on taxing personal income in developing countries are many, including problems of income measurement, administrative capability, low literacy and poor accounting, an economic structure dominated by agriculture and small scale often unregistered enterprises making difficult to tax incomes directly.

In between those two extremes, Smith (1996) incorporates uncertainty to examine the impact of taxation on economic growth and found that it is ambiguous. The purpose of introducing uncertainty in between taxes and growth is to capture the effect of tax policies that generally change the riskiness of disposable income. An increase in the tax rate will reduce the mean and variance of the rate of return of investment and reduce the incentive to save, hence growth will be falling just same as the model that without include any uncertainty. However, if the model comes with uncertainty, the results generally show the need to depend on the consumers. Economic growth will be reduced through saving if consumers do not like to substitute consumption over time. On the other hand, if the consumers like to substitute consumption over time, then saving will increase as tax increases. Hence, the rise in economic growth is certainty.

The empirical results from Chen (2007) had shown that there is an ambiguous relationship between income tax and economic growth. He used AK type growth models with factor income taxes, public capital stock and labour-leisure trade-offs to do the analysis. On one hand, a higher labour income tax will directly reduce the labour supply and lower the marginal productivity of capital, hence the economic growth. On the other hand, if the labour income tax is higher it will have an indirect effect on the economic growth. A higher labour income tax will increase the labour supply through the higher shadow price of capital and thus lower the consumption.
Furthermore, it is indirect negative effects on labour demand via the lower private capital and also indirect positive effect through the higher public infrastructure. Besides, he also shows that there is a negative net direct effect if the inter-temporal elasticity of substitution of labour supply is small enough, and thus higher labour income tax rates will always reduce the economic growth in the long run. Kneller, Bleaney and Gemmell (1999) using panel of 22 OECD countries, declared that endogenous growth model is derived by classifying elements of government budget into four categories: distortion or non-distortion taxation and productive or non-productive explanation.

Aregbeyen and Fasanya (2013) apply dynamic Ordinary Least Square to examine the impact of taxation on economic growth. The results show that there is a positive relationship between tax revenue and economic growth. Their study also reveals that the level of taxation is not the only effect but it also takes into account how government designs and combines the tax structures to generate more revenues and bring growth in the long run.

Owolabi and Okwu (2011) empirically evaluated the contribution of VAT to the development of Lagos State economy. Development aspects considered included infrastructural development, environmental management, education sector development, youth and social development, agricultural sector development, health sector development and transportation sector development. Results showed that VAT revenue contributed positively to the development of the respective sectors. However, the positive contribution was statistically significant only in agricultural sector development.

Ogbonna and Ebimobowei (2012) examined the impact of tax reforms and economic growth of Nigeria using relevant descriptive statistics and econometric analysis and concluded that tax reforms are positively and significantly related to economic growth and that tax reforms granger cause economic growth. Okafor (2012) adopts the ordinary least square (OLS) regression analysis using the period 1981-2007 to explore the impact of income tax revenue on the economic growth of Nigeria and the regression result indicated a very positive and significant relationship between federally collected tax revenue and economic growth in Nigeria.

Worlu and Emeka (2012) use the three stage least square (3SLS) regression framework to examine the impact of tax revenue on Nigeria’s economic growth, judging from its impact on infrastructural development from 1980 to 2007. Their results show that tax revenue stimulates economic growth through infrastructural development. The study also reveals that tax revenue has no independent effect on growth through infrastructural development and foreign direct investment, simply
allowing the infrastructural development and foreign direct investment to positively respond to increase in output.

Despite numerous studies on the relationship between tax revenue and economic growth and the foregoing discussion, attention failed to be focussed on the effect taxation has on social welfare and economic growth in Nigeria. Hence, this study examines the tax revenue – social welfare – growth nexus in Nigeria.

3. Methodology and Materials

The empirical model for this study is based on the endogenous growth model. Following Tosun and Abizadeh (2005) we specified the model for this paper as thus

\[ \text{GDP}_t = \beta_0 + \beta_1 \text{TXR}_t + \beta_2 \text{SW}_t + \beta_3 \text{INV}_t + \epsilon \]  

Where GDP = real gross domestic product is expressed in log form in the estimated model, TXR = tax revenue, SW = social welfare and measured as expenditures on health services, education and other social community services, INV = growth rate of investment and \( \epsilon \) = error correction term. The inclusion of investment in the above model represents control variable.

From eq (1), TXR is expressed as thus:

\[ \text{TXR} = f(\text{PPT}, \text{CIT}, \text{CED}, \text{VAT}) \]  

Where PPT = petroleum profit tax, CIT = corporate income tax, CED = custom and excise duties and VAT = value added tax. These components of tax revenue are examined in the estimated model separately in order to avoid serial correlation in the model. The data for all the variables are sourced from Central Bank of Nigeria Statistical Bulletin, 2013.

In the estimation of the model, the paper adopts Vector Error Correction Model (VECM)\(^2\) framework. A VECM is a restricted VAR designed for use with non-stationary series that are known to be co-integrated. Following Barro (1990) and Worlu and Emeka (2012), the paper expressed VECM as thus:
\[ \Delta GDP_t = \beta_0 + \sum_{k=1}^{r} \alpha_k \phi_{k,t-1} + \sum_{i=1}^{n} \alpha_{1i} \Delta GDP_{t-i} + \sum_{i=1}^{n} \alpha_{2i} \Delta TXR_{t-i} + \sum_{i=1}^{n} \alpha_{3i} \Delta SW_{t-i} + \sum_{i=1}^{n} \alpha_{4i} \Delta INV_{t-i} + \epsilon_t \]  

(3)

Where \( \phi_{k,t-1} \) represents the cointegrating equation residuals so that \( \alpha_k \) term representing each of the adjustment coefficients. The optimal lag lengths of the model are shown by (r) and (n) and chosen by standard diagnostic tests. The error term is assumed to have the normal white noise features.

In order to determine the role of tax revenue in the effect of social welfare on economic growth in Nigeria, the paper interact tax revenue with social welfare and incorporated this in the Eq (3) as follows:

\[ \Delta GDP_t = \beta_0 + \sum_{k=1}^{r} \alpha_k \phi_{k,t-1} + \sum_{i=1}^{n} \alpha_{1i} \Delta GDP_{t-i} + \sum_{i=1}^{n} \alpha_{2i} \Delta TXR_{t-i} + \sum_{i=1}^{n} \alpha_{3i} \Delta SW_{t-i} + \sum_{i=1}^{n} \alpha_{4i} (TXR_{t-i} \ast SW_{t-i}) + \sum_{i=1}^{n} \alpha_{5i} \Delta INV_{t-i} + \epsilon_t \]  

(4)

Eq (4) indicates that the impact of social welfare on economic growth depends on the level of tax revenue in Nigeria. The responsiveness of steady state level of economic growth to social welfare can be determined by differentiating Eq (4) with respect to social welfare. This will give marginal effect of social welfare on economic growth as thus:

\[ \frac{\partial GDP_t}{\partial SW_{t-i}} = \alpha_{3i} + \alpha_{4i} \ast TXR_{t-i} \]  

(5)

From Eq (5), we calculate the threshold level of tax revenue i.e. \( \frac{\alpha_{3i}}{\alpha_{4i}} \) (Greene, 2008; and Bailliu, 2000).
4. Empirical Results and Discussion

We perform a unit root test on each variable in our model using the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests. Table 1 below shows the result of the unit root tests for the variables.

<table>
<thead>
<tr>
<th>Series</th>
<th>Augmented Dickey-Fuller</th>
<th>Phillips-Perron (PP)</th>
<th>Order of Integration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Level</td>
<td>First Difference</td>
<td>Level</td>
</tr>
<tr>
<td>RGDP</td>
<td>-2.32</td>
<td>-5.82***</td>
<td>-1.43</td>
</tr>
<tr>
<td>INV</td>
<td>-0.21</td>
<td>-6.14***</td>
<td>-0.20</td>
</tr>
<tr>
<td>PPT</td>
<td>-2.61</td>
<td>-7.57***</td>
<td>-2.77</td>
</tr>
<tr>
<td>CED</td>
<td>-1.92</td>
<td>-10.32***</td>
<td>-1.92</td>
</tr>
<tr>
<td>CIT</td>
<td>-1.84</td>
<td>-10.60***</td>
<td>-1.84</td>
</tr>
<tr>
<td>VAT</td>
<td>-0.51</td>
<td>-9.97***</td>
<td>-0.54</td>
</tr>
<tr>
<td>SW</td>
<td>-0.32</td>
<td>-7.64***</td>
<td>0.60</td>
</tr>
</tbody>
</table>

***, **, * indicate significance level at 1%, 5% and 10% respectively.

With evidence of unit roots, the series are said to be integrated of order one – I(1), meaning that they must be modelled in first difference ($\Delta y_t = y_t - y_{t-1}$) to make them stationary. A time series is stationary if it does not change overtime, which implies that its values have constant variability. This enables us to avoid the problems of spurious regressions that are associated with non-stationary time series models.

After testing for unit roots, we proceed to test for co-integration (long run relationship between variables). This study uses Johansen and Juselius’s (1990) definition of co-integration. Johansen’s co-integration procedure was used to test for the possibility of at least one co-integrating vector between variables in the models developed for the Nigerian economy in this paper. The results of the co-integration test are reported in table 2 below and this allows the study to examine the long run relationship among the variables.
Table 2

Cointegration Test

<table>
<thead>
<tr>
<th>$\mathbb{H}_0$ : $r$</th>
<th>$\lambda_{\text{Max-eigen}}$</th>
<th>0.05 Critical Value</th>
<th>$\lambda_{\text{Trace}}$</th>
<th>0.05 Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$r = 0$</td>
<td>123.3944***</td>
<td>46.23142</td>
<td>234.0621***</td>
<td>125.6154</td>
</tr>
<tr>
<td>$r \leq 1$</td>
<td>41.81879**</td>
<td>40.07757</td>
<td>110.6677***</td>
<td>95.75366</td>
</tr>
<tr>
<td>$r \leq 2$</td>
<td>34.47492**</td>
<td>33.87687</td>
<td>68.84895*</td>
<td>69.81889</td>
</tr>
<tr>
<td>$r \leq 3$</td>
<td>19.62670</td>
<td>27.58434</td>
<td>34.37404</td>
<td>47.85613</td>
</tr>
<tr>
<td>$r \leq 4$</td>
<td>8.469532</td>
<td>21.13162</td>
<td>14.74734</td>
<td>29.79707</td>
</tr>
<tr>
<td>$r \leq 5$</td>
<td>6.164541</td>
<td>14.26460</td>
<td>6.277810</td>
<td>15.49471</td>
</tr>
<tr>
<td>$r \leq 6$</td>
<td>0.113269</td>
<td>3.841466</td>
<td>0.113269</td>
<td>3.841466</td>
</tr>
</tbody>
</table>

***, **, * indicate significance level at 1%, 5% and 10% respectively.

The result shows that there was at least one co-integration relationship among the variables in the model. The evidence of multivariate co-integration test results suggests that these variables move together in the long run. It is important to note that the existence of co-integration vectors among a group of variables might not imply that there was causal influence between pairs of variables included in the models of the co-integration test. More specifically, with the model incorporating tax revenue indicator and economic growth, it did not necessarily mean that changes in the tax revenue variable had significant impact on economic growth or that changes in economic growth were due to changes in tax revenue. Perhaps other variables included in the models account for the possible long-run nexus that might accomplish such co-integration. In other words, the existence of an equilibrium between a group of variables should not imply that equilibrium exists between all pairs of variables in the model. This could be established by analysing long-run multivariate causal interactions among the variables in a vector error correction model (VECM).

Following the above testing model, the paper adopts a log-linear equation using Vector Error Correction Model (VECM) to know tax revenue – social welfare – growth nexus in Nigeria. Table 3 below shows the role that tax revenue plays in the social welfare – growth nexus in Nigeria. Table 3 explains long run impact analysis among the variables.
Table 3

Co-integrating Relationship Equation

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPT(_t)</td>
<td>0.146***</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>[7.394]</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>CIT(_t)</td>
<td>------</td>
<td>------</td>
<td>0.665***</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>------</td>
<td>------</td>
<td>[4.035]</td>
<td>------</td>
</tr>
<tr>
<td>CED(_t)</td>
<td>------</td>
<td>0.403***</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>------</td>
<td>[6.881]</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>VAT(_t)</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>0.363*</td>
</tr>
<tr>
<td></td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>[1.801]</td>
</tr>
<tr>
<td>SW(_t)</td>
<td>-0.951***</td>
<td>0.925***</td>
<td>0.472***</td>
<td>-0.706***</td>
</tr>
<tr>
<td></td>
<td>[-6.779]</td>
<td>[3.244]</td>
<td>[3.694]</td>
<td>[-2.974]</td>
</tr>
<tr>
<td>(PPT*SW)(_t)</td>
<td>2.999***</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>[5.691]</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>(CIT*SW)(_t)</td>
<td>------</td>
<td>------</td>
<td>-0.760***</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>------</td>
<td>------</td>
<td>[-3.359]</td>
<td>------</td>
</tr>
<tr>
<td>(CED*SW)(_t)</td>
<td>------</td>
<td>-3.473***</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>------</td>
<td>[-5.987]</td>
<td>------</td>
<td>------</td>
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<tr>
<td>(VAT*SW)(_t)</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>0.832*</td>
</tr>
<tr>
<td></td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>[1.665]</td>
</tr>
<tr>
<td>INV(_t)</td>
<td>0.080*</td>
<td>0.116</td>
<td>0.513</td>
<td>0.523***</td>
</tr>
<tr>
<td></td>
<td>[1.185]</td>
<td>[1.142]</td>
<td>[0.261]</td>
<td>[3.731]</td>
</tr>
<tr>
<td>C</td>
<td>0.913</td>
<td>-0.306</td>
<td>-0.659</td>
<td>0.671</td>
</tr>
<tr>
<td></td>
<td>[1.418]</td>
<td>[1.294]</td>
<td>[-1.094]</td>
<td>[0.982]</td>
</tr>
</tbody>
</table>

***, **, * indicate significance level at 1%, 5% and 10% respectively.
Figures in parenthesis are t-statistic.

From table 3 above, the results show that petroleum profit tax has a positive and significant impact on economic growth in Nigeria. This implies that petroleum profit tax enhances economic growth in Nigeria. The results also reveal that corporate income tax has a positive and significant impact on economic growth in Nigeria. This result indicates that corporate income tax improves economic activities which in turn accelerate economic development. The above results also provide evidence that a custom and excise duty has a positive and significant impact on economic growth in Nigeria. This suggests that custom and excise duty is a very important factor that improves economic growth in Nigeria. Value added tax has a positive and significant impact on economic growth in Nigeria. This implies that value added tax is also one of the fiscal policy instruments that helps promote economic activities.
The results show that social welfare has a negative and significant impact on economic growth in the models of petroleum profit tax and value added tax in the economy. This suggests that health services, education and other social services did not receive adequate funds that could help enhance economic activities of the country. Whilst social welfare has a positive and significant impact on economic growth in the models of custom and excise duty and corporate income tax in the economy. This implies that social services received significant funds through corporate income tax and custom and excise duty which in turn accelerated economic growth in the country. The results further show that (in the long run) investment has a positive and significant impact on economic growth in the country. This suggests that investment accelerates economic growth in the economy if and only if the country is operating at the full employment of resources.

The results further revealed that social welfare impacted negatively and significantly on economic growth while petroleum profit tax and value added tax mitigate the negative impact on economic growth in the country. The coefficients of the relationship between social welfare and economic growth were -0.951 at $p < 0.01$ and -0.706 at $p < 0.01$ and the coefficients of interactive term were 2.999 and 0.832 in petroleum profit tax and value added tax models respectively. Based on the estimated coefficients for the social welfare variable and the interaction term, it is found that 0.32 and 0.85 (in the models of petroleum profit tax and value added tax respectively) were the threshold values that social welfare would attain before it could mitigate the negative impact of social welfare on economic growth in Nigeria. This implies that tax revenue lessens the negative effect of social welfare on economic activities in Nigeria. Moreover, social welfare has a positive and significant impact on economic growth while corporate income tax and custom and excise duty adversely affect the positive impact of social welfare on economic growth in Nigeria. The coefficients of the relationship between social welfare and economic growth were 0.472 at $p < 0.01$ (corporate income tax model) and 0.925 at $p < 0.01$ (custom and excise duty model) and the coefficients of interactive term were -0.761 and -3.473 in corporate income tax and custom and excise duty models respectively. Based on the estimated coefficients for the social welfare variable and the interaction term, it is found that 0.27 and 0.62 (in the models of corporate income tax and custom and excise duty respectively) were the threshold values that social welfare would attain before it could adversely affect the positive impact of social welfare -- economic growth nexus in Nigeria. This suggests that tax revenue unfavourably affect the positive effect of social welfare on economic growth in Nigeria.
Aside, table 4 below reports the short run relationship between the variables and ECM coefficients corroborate the co-integrating relationship.

**Table 4**

**Vector Error Correction Model Estimates**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.295</td>
<td>0.186</td>
<td>0.145</td>
<td>0.134</td>
</tr>
<tr>
<td>ΔPPT_{t-1}</td>
<td>-2.434*</td>
<td>-------</td>
<td>-------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>[-1.663]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔCIT_{t-1}</td>
<td>-------</td>
<td>-------</td>
<td>0.517***</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[3.466]</td>
<td></td>
</tr>
<tr>
<td>ΔINV_{t-2}</td>
<td>-0.148**</td>
<td>-------</td>
<td>0.517***</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>[-2.004]</td>
<td></td>
<td>[3.466]</td>
<td></td>
</tr>
<tr>
<td>ECM_{t-1}</td>
<td>0.145***</td>
<td>-0.111**</td>
<td>-0.269**</td>
<td>-0.241**</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.306</td>
<td>0.352</td>
<td>0.259</td>
<td>0.451</td>
</tr>
<tr>
<td>Adj. R-squared</td>
<td>0.261</td>
<td>0.276</td>
<td>-0.065</td>
<td>0.366</td>
</tr>
<tr>
<td>F-statistic</td>
<td>11.66</td>
<td>14.76</td>
<td>15.79</td>
<td>17.12</td>
</tr>
</tbody>
</table>

***, **, * indicate significance level at 1%, 5% and 10% respectively. Figures in parenthesis are t-statistic.

From table 4 above, the results show that petroleum profit tax lagged by 1 has a negative and significant impact on the country’s economic growth. This suggests that petroleum profit tax impedes economic growth in the short run. Also, corporate income tax lagged by 1 has a positive and significant impact on the economic growth in Nigeria. This implies that the corporate income tax actually enhances the economic growth. The results further report that (in the short run) investment lagged by 2 has a negative and significant on Nigeria’s economic growth. This indicates that investment needs adequate attention in the economy in order to enhance the economic growth of Nigeria.

Apart from the short run analysis, the coefficients of error correction model (ECM) were used to explain the tendencies for the variable to return to an equilibrium. Theoretically, the coefficients of ECM are expected to be negative and significant. The ECM in table 4 indicates that there exists a mechanism in correcting the disequilibrium on tax revenue – social welfare – growth nexus in Nigeria. They have the right sign (i.e. negative) and are significant. The significant negative sign of the coefficients on ECM indeed supports co-integration among tax revenue, social welfare and economic growth in the country.
5. Concluding Remarks

The tax revenue – social welfare – economic growth nexus has been examined in this paper using VECM. The paper concludes that the tax revenue (measured by petroleum profit tax and value added tax) plays a pivotal role in ensuring that the negative effect of social welfare on economic growth is mitigated in Nigeria. On the other hand, tax revenue (measured by corporate income tax and custom and excise duty) plays a weak role in the positive effect of social welfare on economic growth in Nigerian economy.

However, tax revenue should be further enhanced in order to apportion significant resources that will help improve the well-being of people living in the country. This will further encourage economic activities in Nigeria. Government should also provide incentives for tax payers to generate more resources from tax which in turn will assist the economy to diversify the revenue-base of the country.

End Notes

1 On one side of these empirical studies are those who suggest that the relation is positive. Uhligia and Yanagawa (1999), Gober and Burns (1997), Gilbert (1942), Shimizutani (2006), Song (2002), Tosun and Abizadeh (2005), found a positive relation between tax and growth. At the other extreme, Padovano and Galli (2002), Engen and Skinner (1996), Folstar and Henneksan (2001), Poulson and Kaplan (2008), Avila and Strauch (2008) concluded that the association between tax and growth is negative. Kneller, Bleaney and Gemmell (1999), Smith (1996) show inconclusive results.

2 The VECM has co-integration relations built into the specification so that it restricts the long-run behaviour of the endogenous variables to converge to their co-integrating relationships while allowing for short-run adjustment dynamics. The co-integration term is known as the error correction term since the deviation from a long-run equilibrium is corrected gradually through a series of partial short-run adjustments.

3 The rationale behind the interaction term is that tax revenue affects the efficiency of social welfare and hence economic growth (Nili and Rastad, 2007).
References


ANALYSIS OF RISK IN INDUSTRIAL ENTERPRISES IN BULGARIA

Milcho BLIZNAKOV¹

Abstract

The article studied the market, operational and financial risks in the industrial establishments in sectors B, C and D, listed on the market of BSE. The study covers the period from 2003 to 2014 and is based on data from the audited annual financial statements. We have used statistical measures of risk – standard deviation, coefficient of variation and probability of negative values applied to return on assets, EBITDA, EBIT, EBT and net profit. As a result of the analysis sectors are grouped by degree of risk.

Introduction

Risk analysis in companies is a subject of research for a large number of Bulgarian and foreign economists. Studies in recent years have been aimed at the development and application of methods and indicators for analysis and risk assessment in enterprises. Publications are based on historical data from the stock markets or financial statements or forward-looking scenarios. The purpose of this article is to propose a methodology for risk analysis and to assess the degree of risk in industrial enterprises in Bulgaria.

Relatively new research methods of risk-based assessment model of CAPM (Sharpe, 1964) have been applied to stock data for different periods of time. There have been analyzed separate enterprises (Conchev and Kostenarov, 2010), as well as portfolios of enterprises comprising various stock indices. The results of these studies, provided there are effective capital markets, successfully identify systemic risk, beta values and the expected return on assets and capital, but do not say much about sources of risk and its management. VaR (value at risk) approach was used in the risk analysis of the Bulgarian capital market (Kostenarov, 2015) (Shirletov, 2007).

Traditional analysis uses operational, financial, and total leverage to determine the relevant risks in the enterprise (Vatchkov Spassova, Yordanov, Rafailov, 2011). The authors distinguish operational and financial risks such as sensitivity to

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revenue and earnings before interest and taxes. Thus measured, these risks are of rather a potential, short-term and perhaps random character, because they do not account for the volatility of the external environment over a long period, but only cover one or two financial periods. Widely used in Bulgaria (Delev, 2015) (Kasarova, Yordanov, 2013) and other countries (Zaychenko, Rogoza, 2009) (Kovalevskaya, Afanasieva, 2008) are also methods for predicting the probability of default based on the Altman approach (Altman, 1968) and its modifications.

Projections are based on risk analysis using scenarios (Nenkov, 2005) and simulations (Rafailov, 2009), with the assumption of available information on the nature of the distribution of risk factors.

1. Method of survey

In this article we offer a methodology and risk analysis based on statistical indicators such as standard deviation, coefficient of variation (Dotchev, 2001) and probability of negative returns (Ambrosio, 2007) (Tikhomirov, Tihomirova, 2010) and (Kalinov, 2010) applied to accepted financial indicators (Vachkov et al., 2006) for return on assets and return on the basis of EBITDA, EBIT, EBT and net profit (Damodaran, 2007). The advantage of this approach is that it allows for the identification of various risks (market, operational and financial) using information from the audited annual financial statements of 93 companies from sectors B, C and D for the period 2003-2014.

The risk analysis used indicators (Table 1) for standard deviation, coefficient of variation and probability of negative returns: sales on assets (SAO) and return on assets on the basis of earnings before interest, taxes and amortization ($ROA_{EBITDA}$), earnings before interest and taxes ($ROA_{EBIT}$), earnings before taxes ($ROA_{EBT}$) and return on earnings ($ROA_{NP}$).
The standard deviation of returns is among the widely accepted indicators of risk (Dochev, D., Slavov, 2009). Applied to various indicators of return, standard deviation indicates the risk level of the markets for this product in the process of product value formation, financing and fiscal effects.

The standard deviation of SOA reflects the risks of the product markets (Miller & Bromiley, 1990). This risk is influenced by the quantity of products sold and market prices formed by the combination of market demand and market supply. Market supply, in turn, is determined by changes in production costs, supply by certain companies and the number of those companies and market demand is determined by the number of users, their preferences, income and availability of close substitutes.

The coefficient of variation of return is defined as the standard deviation of return is divided by the average return (Mun, 2006). A higher value of the coefficient of variation means a higher risk. The standard deviation is always positive, while the average rate of return can have both positive and negative values that determine the corresponding value of the coefficient of variation.

An analysis of the likelihood of negative operating and net return allows us to draw conclusions about the risk of the individual companies and sectors. The probability of negative operating returns \( P(ROA_{EBITDA} < 0) \) determines the level of

**Table 1**

**Used indicators of risk analysis**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Standard deviation</th>
<th>Coeff. of Variation</th>
<th>Probability of negative return</th>
</tr>
</thead>
</table>
| SOA       | \( \frac{\sum T(SOA_t - SOA)^2}{T} \) | \( \frac{\sigma_{SOA}}{SOA} \) | |}
| ROA_{EBITDA} | \( \frac{\sum T(ROA_{EBITDA}^t - ROA_{EBITDA})^2}{T} \) | \( \frac{\sigma_{ROA_{EBITDA}}}{ROA_{EBITDA}} \) | \( \frac{1}{\sigma_{ROA_{EBITDA}} \sqrt{2\pi}} \int_{-\infty}^{0} e^{-\frac{(X-ROA_{EBITDA})^2}{2\sigma_{ROA_{EBITDA}}^2}} dx \) |
| ROA_{EBIT}  | \( \frac{\sum T(ROA_{EBIT}^t - ROA_{EBIT})^2}{T} \) | \( \frac{\sigma_{ROA_{EBIT}}}{ROA_{EBIT}} \) | \( \frac{1}{\sigma_{ROA_{EBIT}} \sqrt{2\pi}} \int_{-\infty}^{0} e^{-\frac{(X-ROA_{EBIT})^2}{2\sigma_{ROA_{EBIT}}^2}} dx \) |
| ROA_{EBT}   | \( \frac{\sum T(ROA_{EBT}^t - ROA_{EBT})^2}{T} \) | \( \frac{\sigma_{ROA_{EBT}}}{ROA_{EBT}} \) | \( \frac{1}{\sigma_{ROA_{EBT}} \sqrt{2\pi}} \int_{-\infty}^{0} e^{-\frac{(X-ROA_{EBT})^2}{2\sigma_{ROA_{EBT}}^2}} dx \) |
| ROA_{NP}    | \( \frac{\sum T(ROA_{NP}^t - ROA_{NP})^2}{T} \) | \( \frac{\sigma_{ROA_{NP}}}{ROA_{NP}} \) | \( \frac{1}{\sigma_{ROA_{NP}} \sqrt{2\pi}} \int_{-\infty}^{0} e^{-\frac{(X-ROA_{NP})^2}{2\sigma_{ROA_{NP}}^2}} dx \) |
operational risk without considering the impact of depreciation and amortization, financial income and expenses and taxes. In determining the probability of negative returns we used the built-in statistical functions of MS Excel: NORM.DIST (x, average stand.dev, cumulative), where \( x \) is the value for which the probability of distribution is sought. In calculating the probability value, 0 is used as a critical value of returns.

**2. Standard deviation**

The average standard deviation of SOA (\( \sigma \) (SOA)) for industry is 0.42 with a maximum value of 0.92 for the „Repair and installation of machinery and equipment“ and a minimum value of 0.09 for „Mining and quarrying“. Above average are the branches „Timber“, „Manufacture of Computer and Communication Systems“ and „Repair and installation of machinery and equipment“. Significantly below average are the branches „Mining and quarrying“ and „Production of medicines“.

**Table 2**

Average standard deviation of SOA, operating, gross and net return on assets for the period 2003-2014

<table>
<thead>
<tr>
<th>Sections and divisions</th>
<th>( \sigma_{(SOA)} )</th>
<th>( \sigma_{(ROA \ EBITDA)} )</th>
<th>( \sigma_{(ROA \ EBIT)} )</th>
<th>( \sigma_{(ROA \ EBT)} )</th>
<th>( \sigma_{(ROA \ NP)} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining and quarrying</td>
<td>0.091</td>
<td>0.032</td>
<td>0.033</td>
<td>0.039</td>
<td>0.037</td>
</tr>
<tr>
<td>Manufacture of food products</td>
<td>0.422</td>
<td>0.697</td>
<td>0.706</td>
<td>0.802</td>
<td>0.800</td>
</tr>
<tr>
<td>Manufacture of beverages</td>
<td>0.246</td>
<td>0.063</td>
<td>0.057</td>
<td>0.057</td>
<td>0.054</td>
</tr>
<tr>
<td>Manufacture of tobacco products</td>
<td>0.686</td>
<td>0.310</td>
<td>0.320</td>
<td>0.372</td>
<td>0.347</td>
</tr>
<tr>
<td>Leather processing; production of shoes and other leather articles</td>
<td>0.102</td>
<td>0.072</td>
<td>0.063</td>
<td>0.057</td>
<td>0.057</td>
</tr>
<tr>
<td>Manufacture of timber and wooden products, except furniture</td>
<td>0.754</td>
<td>0.151</td>
<td>0.146</td>
<td>0.148</td>
<td>0.140</td>
</tr>
<tr>
<td>Production of paper, cardboard and paper and cardboard products</td>
<td>0.448</td>
<td>0.069</td>
<td>0.060</td>
<td>0.060</td>
<td>0.056</td>
</tr>
<tr>
<td>Manufacture of textiles</td>
<td>0.518</td>
<td>0.127</td>
<td>0.122</td>
<td>0.124</td>
<td>0.118</td>
</tr>
<tr>
<td>Manufacture of chemical products</td>
<td>0.448</td>
<td>0.069</td>
<td>0.060</td>
<td>0.060</td>
<td>0.056</td>
</tr>
<tr>
<td>Manufacture of pharmaceuticals</td>
<td>0.169</td>
<td>0.034</td>
<td>0.035</td>
<td>0.032</td>
<td>0.028</td>
</tr>
<tr>
<td>Manufacture of rubber and plastics</td>
<td>0.550</td>
<td>0.096</td>
<td>0.068</td>
<td>0.078</td>
<td>0.075</td>
</tr>
<tr>
<td>Manufacture of basic metals</td>
<td>0.258</td>
<td>0.018</td>
<td>0.016</td>
<td>0.022</td>
<td>0.022</td>
</tr>
<tr>
<td>Fabricated metal products, except machinery and equipment</td>
<td>0.231</td>
<td>0.097</td>
<td>0.095</td>
<td>0.103</td>
<td>0.096</td>
</tr>
</tbody>
</table>
Milcho Bliznakov.
Analysis Of Risk In Industrial Enterprises In Bulgaria

| Manufacture of computer and communication technology, electronic and optical products | 0,710 | 0,141 | 0,141 | 0,139 | 0,139 |
| Manufacture of electrical equipment | 0,548 | 0,078 | 0,074 | 0,075 | 0,070 |
| Manufacture of general- and special purpose - machinery and equipment | 0,590 | 0,145 | 0,143 | 0,146 | 0,143 |
| Furniture manufacturing | 0,255 | 0,167 | 0,176 | 0,200 | 0,198 |
| Other manufacturing | 0,385 | 0,738 | 0,725 | 0,734 | 0,734 |
| Repair and installation of machinery and equipment | 0,0921 | 0,112 | 0,120 | 0,109 | 0,099 |
| Production and distribution of electricity and heat | 0,145 | 0,119 | 0,122 | 0,139 | 0,123 |
| Total | 0,423 | 0,166 | 0,164 | 0,174 | 0,169 |

Source: Author’s own calculations based on data from www.x3analyses.com/

Operational risk ($\sigma (ROA_{EBITDA})$) has a lower value than the market risk due to lower absolute operating income compared to revenues on the one hand, and because of the correlation between revenues and operating costs. For example, the level of operational risk is about 2.5 times lower than market risk values. The average standard deviation of operating return on assets is 0,166, with a maximum value of 0,73 for the „other manufacturing“ and minimum 0,018 to section „Production of metals“. And again the values for various „Mining and quarrying“, „Manufacturing of pharmaceutical products“ are among the lowest.

The standard deviation of operating, gross and net return on assets base is several times lower compared to the standard deviation of the base ROA. The size of this difference is determined by the ability of the company to control production costs. The average standard deviation of the operational return is 46% of the standard deviation of ROA, while the standard deviation of return on equity is 40%. This indicates that the level of risk is formed mostly as a combination of market and operational risks while depreciation costs, interest and taxes have a relatively little impact.

Table. 2 shows that the standard deviation of operating, gross and net returns are of approximately the same level for most industries. We can identify three branches with relatively high risk level (above 0,3): „Manufacture of food products“, „Manufacture of machinery and equipment“ and „Other manufacturing“. There are six low-risk branches (around or below 0,05): „Manufacture of furniture“, „Manufacture of pharmaceutical substances“, „Mining and quarrying“, „Production and distribution of heat and electricity“, „Manufacture of paper and cardboard products“ and „Manufacture of rubber“. Five branches have an average risk (around and below 0,10).
Fig. 1 shows the relationship between risk-based standard deviation of ROA and net returns. The trend line and the calculated regression coefficient show a slight positive correlation of low statistical significance.

\[ y = 0.1087x + 0.1235 \]
\[ R^2 = 0.014 \]

**Fig. 1. Standard deviation SOA and net return**

The relationship between the two types of risk is influenced by the size and change in operating costs, depreciation, financial revenues and expenses and taxes. In industrial enterprises operating costs are largely variable as they include the cost of manufacture of the product as materials, labor and external services that are proportional to the amount of products and sales. They are determined by both the amount of production and costs and the prices of resources used. The latter, in turn, have a significant impact on the market prices of production. This bilateral relationship is explained and characterized by the high correlation (0.91) between revenues and operating costs.

The relationship between the operational risk and net (Fig. 2) is considerably close to a linear one and has a higher coefficient of determination. The regression coefficient of 1.09 indicates a positive regression dependence. The coefficient of determination shows that over 99% of changes in net returns can be explained by operational returns. This could be explained by the in substantial impact of amortization expenses, financial expenses and taxes having the character of fixed costs and a weak correlation with operational returns.
Fig. 2. Standard deviation of operating and net returns

3. Coefficient of Variation

The average coefficient of variation of return on assets based on revenue ($CV_{ROS}$) industry is 0.677 with a maximum of 2.04 for „Production of computers and communication equipment“, „Manufacture of food products“ 0.96 „Production of tobacco products“ 1.49. The lowest risk is demonstrated in the „Manufacture of basic metals“ 0.23 „Production and distribution of electrical and heat energy“ 0.25, „Mining and quarrying“ 0.26 „Production of drugs“ 0.27.

Table 3

Average coefficient of variation of income of 1 lev assets, gross and net return on assets for the period 2003-2014

<table>
<thead>
<tr>
<th>Sections and divisions</th>
<th>$CV_{SOA}$</th>
<th>$CV_{(ROA_{EBITDA})}$</th>
<th>$CV_{(ROA_{EBIT})}$</th>
<th>$CV_{(ROA_{ET})}$</th>
<th>$CV_{NP}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining and quarrying</td>
<td>0.259</td>
<td>0.290</td>
<td>0.422</td>
<td>0.495</td>
<td>0.522</td>
</tr>
<tr>
<td>Manufacture of food products</td>
<td>0.964</td>
<td>-12.449</td>
<td>-7984</td>
<td>-4980</td>
<td>-4824</td>
</tr>
<tr>
<td>Manufacture of beverages</td>
<td>0.723</td>
<td>2232</td>
<td>-15.400</td>
<td>-4070</td>
<td>-3796</td>
</tr>
<tr>
<td>Manufacture of tobacco products</td>
<td>1494</td>
<td>-14.880</td>
<td>-6534</td>
<td>-8814</td>
<td>-9069</td>
</tr>
<tr>
<td>Leather processing; production of shoes and other leather goods</td>
<td>0.718</td>
<td>-314.578</td>
<td>-3233</td>
<td>-6647</td>
<td>-6014</td>
</tr>
<tr>
<td>Manufacture of timber and other wooden products, except furniture</td>
<td>0.958</td>
<td>1873</td>
<td>4032</td>
<td>4994</td>
<td>5712</td>
</tr>
</tbody>
</table>

$y = 1.0868x - 0.0118$

$R^2 = 0.9903$
The coefficient of variation of the operating return (\(CV(ROA_{EBITDA})\)) for the Industry is 4.5 with a maximum value of 13.88 for „Fabricated metal products“ and a minimum value of -314.6 for „Manufacture of leather, shoes, etc.“. The industries with the lowest risk are „Manufacture of basic metals“ 0.22 „Production of pharmaceuticals“ and 0.28 „Mining and quarrying“ 0.29. Below average risk is shown in „Production of Rubber“, „Manufacture of wood“ and „Manufacture of paper“.

The coefficient of variation of return on assets before interest and taxes (\(CV(ROA_{EBIT})\)) has a maximum value of 6.78 in „Production of rubber and plastics“ and minimum -17.19 for „Fabricated metal products“. The lowest risk is in „Mining and quarrying“ 0.42 and „Production of pharmaceuticals“ 12.45, followed by „Manufacture of basic metals“ 0.49 „Production of paper“ 1.96. The sectors with the highest risk can be characterized as those with the smaller absolute value of the negative coefficient of variation. This is sector D and section „Production of leather goods“.

The average coefficient of variation of return before tax (\(CV(ROA_{EBT})\) - 21.58 has a maximum value of 4.99 and a minimum -19.62. The negative average is
due to the large number of sectors and sections with negative returns (10). The lowest risk businesses are again under „Production of pharmaceuticals“ and „Mining and quarrying“, but this time with reversed positions and values of 0,46 and 0,50, respectively. They are followed by „Manufacture of basic metals“ 1,22 „Repair and installation of machinery and equipment“ 1,83 „Manufacture of paper“ 3,97. The greatest risk is shown in „Manufacture of beverages“ -4,07 „Manufacture of textiles“ -4,22 and other industries with negative coefficient of variation.

The lowest risk industries are „Manufacturing of pharmaceuticals“, „Mining and quarrying“, followed by „Manufacture of basic metals“ and „Repair and installation of machinery and equipment“ The highest risk is again a characteristic of the manufacture of beverages, food products and textiles.

Fig. 3 shows the relationship between the net return (horizontal axis) and the coefficient of variation of net return (vertical axis). The risk increases from right to left, which means that with the increase in return the risk is reduced and vice versa. The values are located in the first and third quadrant depending on the value of returns and coefficient of variation. Sectors of low risk are located on the far right, near the horizontal axis.

![Graph showing the relationship between net return and coefficient of variation](image)

**Fig. 3. Net returns and coefficient of variation of net returns**

They are characterized by a low coefficient of variation and the relatively high return on assets. In the next group (medium risk) are the industries with high positive values of the coefficient of variation and low positive rates of return. The group of significant risk includes sectors with high negative values of the coefficient of variation and small negative return. A high risk group is that of the industries with relatively high negative return on assets, which are located near the bottom of the horizontal axis.
4. Probability for negative operating and net return

Fig. 4 presents graphs of probabilities of a certain level of net return of the surveyed industries. Values are calculated by using the normal distribution for the value of returns in certain average return and standard deviation. The results obtained enable the grouping of the surveyed sectors and divisions according to the level of risk. Sectors with low risk have a positive average return based on EBITDA with values above 10%, the distribution of returns is concentrated around the average value, and the probability of negative returns is insignificant (up to 5%). These are the „Production of pharmaceuticals“ (12.1%) and the sector „Mining and quarrying“ (11.2%) whose charts are almost identical.

![Graph of net return distributions](image)

**Fig. 4. Distribution of net returns**

The next group of five sectors have almost identical charts of distribution with an average return of around 7%. These are the sectors „Production of Rubber“, „Manufacture of leather, paper and beverage“ sector and „Production of electricity and heat“.

Three sectors (manufacturing of electrical equipment, metal products and basic metals) have averages between 4 and 5%. They have almost the same average return as the previous group, but the probabilities are distributed across a relatively wide range, and are therefore more risky.

Another five branches have an average return of around three percent and three other branches (food, other manufacturing and machinery and equipment) comprise the most risky group with an average return of below 2%.
### Average net return and probability of negative operating and net return

<table>
<thead>
<tr>
<th>Sectors and industries</th>
<th>net return</th>
<th>Probability of negative returns</th>
<th>Operational</th>
<th>Net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining and quarrying</td>
<td>0.070</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Manufacture of food products</td>
<td>-0.0166</td>
<td>53.2%</td>
<td>58.2%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of beverages</td>
<td>-0.0014</td>
<td>32.7%</td>
<td>60.4%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of tobacco products</td>
<td>-0.0038</td>
<td>52.7%</td>
<td>54.4%</td>
<td></td>
</tr>
<tr>
<td>Leather processing; production of shoes and other leather goods</td>
<td>-0.0010</td>
<td>50.1%</td>
<td>56.6%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of timber and wood products, except furniture</td>
<td>0.024</td>
<td>29.7%</td>
<td>43.1%</td>
<td></td>
</tr>
<tr>
<td>Production of paper, cardboard and paper and cardboard products</td>
<td>0.012</td>
<td>17.5%</td>
<td>41.4%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of textiles</td>
<td>-0.0029</td>
<td>45.8%</td>
<td>59.8%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of chemical products</td>
<td>0.012</td>
<td>17.5%</td>
<td>41.4%</td>
<td></td>
</tr>
<tr>
<td>Production of pharmaceuticals</td>
<td>0.062</td>
<td>0.0%</td>
<td>1.4%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of rubber and plastics</td>
<td>-0.0014</td>
<td>22.9%</td>
<td>57.6%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of basic metals</td>
<td>0.017</td>
<td>0.0%</td>
<td>21.7%</td>
<td></td>
</tr>
<tr>
<td>Fabricated metal products, except machinery and equipment</td>
<td>-0.0008</td>
<td>47.1%</td>
<td>53.5%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of computer, electronic and optical products</td>
<td>0.021</td>
<td>41.0%</td>
<td>43.9%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of electrical equipment</td>
<td>0.020</td>
<td>19.9%</td>
<td>38.9%</td>
<td></td>
</tr>
<tr>
<td>Manufacture of general- and special purpose machinery and equipment</td>
<td>-0.0017</td>
<td>38.1%</td>
<td>54.7%</td>
<td></td>
</tr>
<tr>
<td>Furniture manufacturing</td>
<td>-0.0038</td>
<td>46.7%</td>
<td>57.6%</td>
<td></td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>-0.0104</td>
<td>52.3%</td>
<td>55.6%</td>
<td></td>
</tr>
<tr>
<td>Repair and installation of machinery and equipment</td>
<td>0.049</td>
<td>23.8%</td>
<td>30.8%</td>
<td></td>
</tr>
<tr>
<td>Production and distribution of electricity and heat</td>
<td>-0.0067</td>
<td>55.3%</td>
<td>70.6%</td>
<td></td>
</tr>
</tbody>
</table>

Source: Author’s own calculations based on data from www.x3analyses.com/

In Table 4 and Fig. 8 are presented estimated data on average return and the probability of a negative return for the surveyed sectors. Based on return data and probabilities the following industry groups can be identified, depending on the degree of risk.
The lowest probability of negative returns and consequently a low risk was exhibited in the sectors „Mining Industry“ (2,8%) and the „Production of pharmaceuticals“ (1,4%) at an average return on assets within 6,2-7,0%. Graphs of the distribution of returns based on EBITDA, EBIT and net returns are presented in Fig. 5.

![Graph of operational and net returns for the sector „Mining and quarrying“ (low risk)](image)

**Fig. 5. Distribution of operational and net returns for the sector „Mining and quarrying“ (low risk)**

Seven sections („Manufacture of basic metals“, „Repair and installation of machinery and equipment“, "Manufacture of electrical equipment", „Manufacture of paper, cardboard and paper and cardboard products“, „Manufacture of chemicals and chemical products“, „Production of timber“, „Manufacture of computer, electronic and optical products“) formed the group of sectors of medium risk and have a positive return (from 0% to 5%) and probability of negative net returns between 21,7% and 43,9%. Three branches are low-tech and the rest are medium or high tech ones. A typical characteristic for this group of industries is the small positive return on assets and accordingly a likelihood of negative returns of below 50%.

The next group (significant risk) includes eight branches all having a negative average return of 0% to -4,00% and a probability of negative returns between 54% and 60%. These are „Fabricated metal products, except machinery and equipment“, „Leather processing; production of shoes and other leather goods“, „Manufacture of beverages“, „Manufacture of rubber and plastics“, „Manufacture of general - and special-purpose equipment“, „Manufacture of textiles“, „Production of furniture „and“ Manufacture of tobacco products“.
Graphs of the distribution of returns based on EBITDA, EBIT and net return on typical representatives of the group (Sector „Production and distribution of electricity and heat“) are presented in (Fig. 7). The trend line (Fig. 8) and EFF
regression coefficient showed that with the increase in the average return the probability of a negative return decreases as the coefficient of determination (0.50) showed moderate dependency. Ten sections are likely to have negative returns of 53% to 60% and have the characteristic of a relatively low negative average return.

Fig. 8. Net return on assets and probability of negative returns

By means of the indicators of probability of negative returns on EBITDA margin and net return on assets base the following grouping of sectors according to risk can be made:

298
<table>
<thead>
<tr>
<th>Degree of risk</th>
<th>Sections and sectors</th>
<th>Probability of negative returns in%</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>the ROA_{the} EBITDA</td>
<td>the ROA_{the} NP</td>
</tr>
<tr>
<td>Short</td>
<td>Manufacture of basic metals, manufacture of drug substances and products, Mining and quarrying</td>
<td>0%</td>
<td>1.4% to 21.7%</td>
</tr>
<tr>
<td>average</td>
<td>Production of paper, cardboard and paper and cardboard articles, production of chemical products, manufacture of electrical equipment, manufacture of rubber and plastics articles, repair and installation of machinery and equipment, manufacture of wood and cork, except furniture</td>
<td>Up to 30%</td>
<td>30.8% to 57.6%</td>
</tr>
<tr>
<td>significant</td>
<td>Production of beverages, Manufacture of machinery and of general- and special purpose equipment, manufacture of computer and communication technology, electronic and optical products, manufacture of textiles, manufacture of furniture, manufacture of metal products, leather processing, footwear and other leather products</td>
<td>Up to 50%</td>
<td>43.9% to 60.4%</td>
</tr>
<tr>
<td>high</td>
<td>Other Manufacturing, Manufacture of tobacco products Manufacture of food products, manufacture and distribution of heat and electricity</td>
<td>Over 50%</td>
<td>54.4% to 70.6%</td>
</tr>
</tbody>
</table>

**Conclusions**

As a result of the performed analysis we can draw the following conclusions:
1. Companies from the industrial sectors traded on the Bulgarian Stock Exchange during the period 2003 - 2014, have substantial differences both in the level of return on assets and in the degree of risk. Relatively
few sectors showed positive average ROA. They form the groups of low and medium risk depending on the probability of negative returns.

2. With a few exceptions sectors are classified within the same risk group according to the probability of negative operating and net returns indicators.

3. The probability of negative net return is higher than the corresponding indicator for operational returns. The difference for the individual sectors is mainly due to the impact of depreciation, financial income and expenses and tax charges.

4. The different groups formed on the basis of similar probability of negative return include industries with different distribution of the return determined by the difference in the standard deviation.

5. Managers of industrial enterprises can use the proposed indicators in the analysis, evaluation, disclosure and management of the risk.

References


TRENDS IN OFFICE REAL ESTATE MARKET IN BULGARIA

Christo ILYEV

Abstract

The purpose of the present paper is to conduct a comparative analysis of the office property market in Bulgaria including other countries in the region in order to estimate its investment attractiveness and maturity. A wide range of indicators are used, incl. size of existing office space, rent levels, yields, investment volumes, as well as a pair of ratios that reveal the amount of investments in the sector as compared to the number of population and GDP of the countries. The results show that the market for office real estate in Bulgaria offers good opportunities for generating high returns for the investors. Yet, it still fails to be a draw for higher investment volumes as compared to other countries in Central Europe with more mature markets.

Introduction

The topicality of the research can be attributed to the dynamic development of the office properties market in Bulgaria. It is seen as the biggest market in terms of number of closed deals, realized projects and amount of invested funds as compared to the other commercial real estate segments in the country. It is true that in the aftermath of the world’s financial and economic crisis, investments in commercial real estates in the region have dropped sharply while competition among countries for new investors has reached a peak.

Accordingly, the present research will help define the state of compatibility of office real estate market in Bulgaria and its potential for development (opportunities for future growth). The outcomes of the research could be used to the benefit of potential investors and the state, provided the latter aims to follow a policy of encouraging investments in the sector.

The purpose of the present paper is to examine the development of the office real estate market in Bulgaria and other countries from Central and East Europe after 2007 and use it as a basis to outline major trends in this sector.
1. Research methodology

In line with the research methodology, the author is required to use conventional indicators for analysis of the property market such as: size of available (already in use) office space/real estate in square meters, monthly rental rates in euro per 1 sq. m of premium office property, level of profitability as a percentage of investments in prime office property, volume of investment in office property in millions of euros, investments in office property per capita (in total for the period under study) and percentage of the annual average volume of investments compared to a particular country’s GDP.

International comparison of indicators is done for metropolitan office real estate markets (in this case, capital cities) or countries. For the selection of capitals and countries, the specifics of the indicators included in the survey have been taken into consideration.

The size of existing areas of office property, rent levels and rates of return is presented for capital cities as this is the basic territorial unit on which data is gathered by international consulting companies dealing in commercial property. Extrapolation of data in order to obtain aggregate values for the countries is deemed inappropriate because of the significant differences that exist between capital and other cities in the surveyed countries.

Other indicators though, such as volume of investments in office property, investments per capita and percentage of investments in office real estate in relation to GDP, are more reliably calculated for countries. In addition, the peculiarities of collecting baseline data for investments and GDP make it necessary to compare countries rather than cities.

The selection of countries and capital cities, accordingly, is done against the following two criteria:

1. Countries in the region of Central and East Europe, which like Bulgaria used to be former socialist countries, going through a transition period to a free market economy and which are at present EU member states.

2. Availability of primary data on selected countries and capital cities which meet the standard methodology for data collection and in turn allows for analysis of the indicators used by the author to study the market trends in office real estates.

The first criterion allows us to compare markets in terms of maturity whereas the second criterion helps to maintain continuity and reliability of collected data.

On the basis of the above-mentioned criteria we have chosen the following six countries and their capital cities: Bulgaria and its capital Sofia, Rumania and its capi-
tal Bucharest, Slovakia and its capital Bratislava, the Czech Republic and its capital Prague, Hungary and its capital Budapest, Poland and its capital city Warsaw.

Sources of primary data using the second criterion have been the leading consulting companies in the area of commercial/ business property Cushman & Wakefield and their local partner Forton. The study undertaken by the author to identify the possible sources of primary data collection showed that these sources provide the most complete and comparable information on markets for office property in the selected countries and capital cities.

The survey encompasses the period following 2007, as the year immediately before the economic recession, and the first half of 2015 for which available data is at hand. The above eight and a half year period is marked by the typical phases of the economic cycle – a hike in investments in office properties, a sharp downturn and recovery. The period is long enough to eliminate one-time investments and allows a sufficiently objective evaluation of key trends in the markets for office real estate under survey (in the surveyed markets for office property).

For the purposes of the survey, the author assumes that the term market for office real estate embraces two principal market segments: the purchase and sale segment and the renting segment. The grounds for this assumption can be seen in the tricky task to categorize office property in either segment, especially in the long-term, making it possible to switch the market segment at the discretion of the investors. Practice shows that most office properties currently in use, but offered for sale often pertain to both market segments. In this way the investors do not lose rental income for the period the office property is on the market.

Review of available literature on the subject shows that comparative studies of office real estate markets in a region are carried out regularly and covered by periodic publications (quarterly and yearly) and separate special reports of world’s leading consulting companies on commercial real estate – Cushman & Wakefield, Colliers International, CBRE and JLL. These international publications are complemented by regular reports on the state and perspectives of local markets, prepared by local partners of the aforementioned consulting companies. Reports on the subject are also issued by certain banks among which the Austrian subsidiary of the Italian Bank UniCredit.

2. Comparative analysis of office real estate markets

The first index that will be used to compare the office real estate market in Sofia with other capital cities from the sample is „Size of existing office space“ (see Table 1).
As seen from the table, it is clear that at the beginning of the period (2007) there are three markets which stand out from the rest in terms of size – these are the capital cities of Warsaw (Poland), Budapest (Hungary) and Prague (Czech Republic). All of the cities are in Central Europe exhibiting an area of more than 2 mln square metres of office space/property (Cushman & Wakefield LLP, 2015).

With regard to the remaining cities in the survey, office property area is considerably lower – Bratislava (1 mln sq. m), Bucharest (890 thousand sq. m) and Sofia (673 thousand sq. m). For example, Bratislava the population of which is three times smaller than the population of Sofia and five times smaller than Bucharest, is in fact overriding both cities in terms of size of office property up to date (Eurostat, 2015).

In the beginning of the survey period, Sofia was the smallest market of all the capital cities embraced in the sample. In the years before the crisis (2005-2008) however Sofia exhibited some actual growth in investments in this sector, as the period was characterized by a massive construction of new and modern office buildings. It is namely this rapid growth in construction during the surveyed period that fueled market growth in the following years even though sector investments were weaker during the same period. (Forton, 2015).

The year 2008 has witnessed a sudden rise in the size of modern office buildings and office space in Sofia, accounting for 31.3% (see Table 2). This represents the highest growth rate of all the cities and can be solely attributed to the large volume of newly-risen office buildings and office property in use. Still, Sofia remained the
smallest market in size as compared to the rest of surveyed office properties. The Bulgarian capital also remains the market with the least amount of office area/properties.

Table 2

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Bratislava</td>
<td>15.3%</td>
<td>11.9%</td>
<td>5.2%</td>
<td>6.1%</td>
<td>4.0%</td>
<td>-2.2%</td>
<td>4.2%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Budapest</td>
<td>н. д.</td>
<td>н. д.</td>
<td>2.6%</td>
<td>1.2%</td>
<td>-0.8%</td>
<td>2.1%</td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Bucharest</td>
<td>19.8%</td>
<td>39.4%</td>
<td>9.4%</td>
<td>8.4%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Warsaw</td>
<td>10.0%</td>
<td>9.0%</td>
<td>5.8%</td>
<td>4.7%</td>
<td>7.3%</td>
<td>6.6%</td>
<td>6.8%</td>
<td>2.9%</td>
</tr>
<tr>
<td>Prague</td>
<td>15.1%</td>
<td>7.2%</td>
<td>0.3%</td>
<td>3.8%</td>
<td>2.9%</td>
<td>2.7%</td>
<td>2.6%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Sofia</td>
<td>31.3%</td>
<td>16.2%</td>
<td>28.0%</td>
<td>12.5%</td>
<td>9.5%</td>
<td>2.1%</td>
<td>2.3%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>

*Source: Author’s estimates based on data from Cushman & Wakefield LLP, 2015 and Forton, 2015.*

In 2009, a new leader emerged in terms of office real estate growth. This was the city of Bucharest with an annual increase in office space by 39.4%. Sofia came second with 16.2%, which is two times less the growth rate of the previous year. The rest of the European capitals also showed weaker growth rates in the sector on an annual basis. In 2009, the market for office property in Sofia (1.03 mln sq. m) already exceeded the limit of 1 mln sq. m. In 2010, Sofia regained its leadership position with an annual growth rate of 28%. This is nearly three times as much as Bucharest ranking second (9.8%). At the same time, larger and better developed markets in Central Europe exhibited growth rates under 6%.

In 2011 Sofia once again proved to be the fastest growing market in office property (12.5%), ahead of Bucharest (8.4%), which followed in second place. In comparison, larger markets such as Budapest and Prague had shown only a slight growth. In the same year, Sofia (1.48 mln sq. m) overtook Bratislava (1.45 mln sq. m) in market size. The situation remained unchanged until 2012 when Sofia took up the lead again with a growth rate of 9.5%, while the rest of the cities had growth rates similar to the levels of the previous year. In 2012, Sofia had 1.6 mln sq. m of operating office property, compared to 1.5 mln sq. m of office property in Bratislava, 1.9
mln sq. m in Bucharest, 2.9 mln sq. m in Prague, 3.2 mln sq. m in Budapest and 3.9 mln sq. m in Warsaw.

Over the period 2013-1015, the annual growth of the office properties market in Sofia showed a gradual slide to 2.1% (2013), 2.3% (2014) and 1.9% respectively (first half of 2015), which sent the Bulgarian capital half way down the ranking table. The markets in Bucharest, Warsaw and Prague performed stronger with an annual growth of up to 7%. Due to a slower growth, the office property market in Sofia grew slightly with only 100 thousand sq. m over a three year period: from 1.62 mln sq. m in 2012 to 1.72 mln sq. m during the first half of 2015. Nonetheless, these values were good enough to expand the market in Sofia and make it bigger than that in Bratislava (1.55 mln sq. m) at the end of the period. At the same time, the office market in Bucharest reached 2.16 mln sq. m, which is only 440 thousand sq. m more than the existing office space/property in Sofia, compared to the Romanian capital which is twice bigger than the Bulgarian capital in number of population. (Eurostat, 2015).

Summary of data for the above period shows that Warsaw has the greatest area of office space in physical volume, (+1.8 million square metres), followed by Bucharest (+1.3 mln sq.m) and Sofia with (+1.0 mln sq.m) comes third. The Bulgarian capital managed to outpace the two other big markets in Central Europe – Budapest (+899 thousand sq. m) and Prague (+953 thousand sq. m). In terms of relative growth, Sofia ranks first with an increase of 156%, thanks to its low starting position.

The next key indicator to consider relates to the rental rates of prime office properties of the capital cities under survey. Higher rent levels are indicative of a more developed market, high demand, quality office projects and an upturn in the local economy.

The onset of the period reveals that most of the cities have quite similar rent levels of prime office property – 20-21 euro/sq. m/per month (see Table 3).

### Table 3

<table>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bratislava</td>
<td>20.0</td>
<td>18.0</td>
<td>17.0</td>
<td>17.0</td>
<td>17.0</td>
<td>15.5</td>
<td>15.0</td>
<td>15.0</td>
<td>15.0</td>
</tr>
<tr>
<td>Budapest</td>
<td>21.0</td>
<td>22.0</td>
<td>20.0</td>
<td>21.0</td>
<td>21.0</td>
<td>21.0</td>
<td>21.0</td>
<td>21.0</td>
<td>21.0</td>
</tr>
<tr>
<td>Bucharest</td>
<td>21.0</td>
<td>21.0</td>
<td>19.5</td>
<td>18.5</td>
<td>18.5</td>
<td>19.0</td>
<td>19.0</td>
<td>19.0</td>
<td>19.0</td>
</tr>
</tbody>
</table>
Warsaw | 30,0 | 29,0 | 22,0 | 24,5 | 26,0 | 26,5 | 25,0 | 25,0 | 24,8  
Prague  | 20,0 | 23,0 | 21,0 | 21,0 | 21,0 | 20,3 | 19,5 | 19,5 |        
Sofia   | 16,0 | 17,0 | 13,5 | 12,3 | 12,0 | 12,5 | 12,5 | 12,5 | 12,5  

**Source:** Cushman & Wakefield LLP, 2015; Forton, 2015.

There are two exceptions being below or above these values – Warsaw with (30 euros/sq.m/month) and Sofia with (16 euros/sq.m/month) (Cushman & Wakefield LLP, 2015). These figures show that in 2007 the Bulgarian capital city lagged considerably behind other cities in the survey – on the one hand, the tenants were reluctant to pay the high rentals typical of other European capital cities and on the other, scarcity of quality office space/property acted as a deterrent to rental growth. In 2008 Sofia was one of the cities exhibiting a slight increase (+1 euro/sq.m/month), and the level of 17 euro/sq.m/month proved to be the highest level throughout the period. As a result of the ensuing crisis and withdrawal of investors from the sector, office rental levels in Sofia showed an average low of 12,5 euro/sq.m/month. (Forton, 2015).

After a substantial drop in office rents in Sofia in 2009 there followed two more years of a downward trend and then in 2012 there was a hike in rents of 4,2%. Over the next three years office rental space in Sofia maintained levels of 12,5 euro/sq.m/month until the first half of 2015. Although most of the surveyed cities reported declines (with the exception of Budapest where rental rates remained stable at 21 euro/sq.m/month over the years) Sofia remained last with the lowest rents. Closer to it came Bratislava with rental levels of 15 euro/sq.m/month.

The summary of data for the period shows that the greatest declines in absolute terms were recorded for Warsaw (-5,3 euro/sq.m/month) and Bratislava (-5,0 euro/sq.m/month), with Sofia following at 3,5 euro/sq.m/month. All of the surveyed cities failed to register growth apart from Budapest which kept rental rates stable. In relative terms, the biggest decreases were registered in Bratislava (-25%) and Sofia (-22%). On the basis of collected data we can conclude that the market for office property in Sofia was most affected by global financial and economic crisis in the surveyed region for the period 2008-2010. Its effects on commercial real estate development in Bulgaria can be seen in the outflow of investments, frozen projects, low economic activity and low demand. A logical consequence of these processes is the lowering of rents, which is felt most strongly in the smaller and underdeveloped markets like the market in Bulgaria.
A vital index which shows whether the market can draw investments is the return on investment index in real estate. Normally, the more developed and liquid markets offer lower yields due to the intense competition among investors who invest in real estates. Conversely, risk driven markets feature higher yield levels to compensate for the higher insecurity and lack of liquidity. Return on investment is the main motivation for investors in choosing a location although it does not always prevail. Investors with a riskier profile are those who are generally led by the levels of return and are prepared to invest in real estates in less developed markets.

We can say that for the entire period, Sofia is an unequivocal leader in levels of profitability. (see Table 4).

Table 4

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</tr>
</thead>
<tbody>
<tr>
<td>Bratislava</td>
<td>5.8%</td>
<td>7.3%</td>
<td>8.0%</td>
<td>7.3%</td>
<td>7.3%</td>
<td>7.3%</td>
<td>7.3%</td>
<td>7.3%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Budapest</td>
<td>6.0%</td>
<td>6.8%</td>
<td>7.8%</td>
<td>7.3%</td>
<td>7.3%</td>
<td>7.3%</td>
<td>7.5%</td>
<td>7.3%</td>
<td>7.3%</td>
</tr>
<tr>
<td>Bucharest</td>
<td>6.3%</td>
<td>7.5%</td>
<td>9.0%</td>
<td>9.0%</td>
<td>9.0%</td>
<td>8.5%</td>
<td>8.5%</td>
<td>7.8%</td>
<td>7.8%</td>
</tr>
<tr>
<td>Warsaw</td>
<td>5.3%</td>
<td>6.8%</td>
<td>7.0%</td>
<td>6.5%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.0%</td>
<td>6.3%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Prague</td>
<td>5.0%</td>
<td>6.8%</td>
<td>6.9%</td>
<td>6.5%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.3%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Sofia</td>
<td>7.5%</td>
<td>8.5%</td>
<td>11.0%</td>
<td>10.0%</td>
<td>9.5%</td>
<td>9.5%</td>
<td>9.5%</td>
<td>9.0%</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

Source: Cushman & Wakefield LLP, 2015; Forton, 2015.

The difference between the Bulgarian capital and the remaining capital cities is not insignificant. At the beginning of the period, Sofia reported return on investment in prime office space in the amount of 7.5%, which is significantly higher than Bucharest which comes next in the ranking table (6.3%). Other central European capitals reported returns in the range of 5.0%-6.0%. All surveyed cities report a hike in their returns during the three years before 2009, with each of them registering peak values for this index – Sofia (11.0%), Bucharest (9.0%), Bratislava (8.0%), Budapest (7.8%), Warsaw (7.0%), Prague (6.9%). After 2009, there was a gradual downward trend. At the end of the first half of 2015, Sofia was still a leader with 8.5%, followed by Bucharest (7.8%).
Summarized data on yields show that all of the surveyed cities reported an increase of this index throughout the period, which can be explained with the growing insecurity felt by investors in said region. The strongest growth was witnessed in Bratislava and Bucharest (in absolute and relative terms). Throughout the period Sofia registered a hike in yields of 1,0 percentage points, as much as Prague. In relative terms, the increase of the Bulgarian capital was negligible (13%), due to the high output value.

A direct indicator of investors’ interest is the cost volume of investments in office property (see Table 5).

**Table 5**

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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovakia</td>
<td>89,1</td>
<td>85,1</td>
<td>8,7</td>
<td>н. д.</td>
<td>95,6</td>
<td>16,5</td>
<td>125,4</td>
<td>46,0</td>
<td>н. д.</td>
</tr>
<tr>
<td>Hungary</td>
<td>739,0</td>
<td>343,1</td>
<td>165,5</td>
<td>66,1</td>
<td>435,1</td>
<td>41,0</td>
<td>209,3</td>
<td>152,1</td>
<td>94,0</td>
</tr>
<tr>
<td>Rumania</td>
<td>608,7</td>
<td>360,8</td>
<td>н. д.</td>
<td>124,2</td>
<td>115,1</td>
<td>172,8</td>
<td>213,7</td>
<td>68,4</td>
<td>5,0</td>
</tr>
<tr>
<td>Poland</td>
<td>1 188,5</td>
<td>1 037,1</td>
<td>354,2</td>
<td>616,6</td>
<td>1 151,8</td>
<td>1 128,8</td>
<td>1 197,4</td>
<td>1 195,2</td>
<td>373,9</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>1 233,9</td>
<td>481,0</td>
<td>343,9</td>
<td>294,9</td>
<td>579,9</td>
<td>410,1</td>
<td>746,6</td>
<td>558,3</td>
<td>74,0</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>314,6</td>
<td>216,4</td>
<td>22,0</td>
<td>9,9</td>
<td>48,1</td>
<td>10,0</td>
<td>4,7</td>
<td>65,5</td>
<td>5,9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>4 174</td>
<td>2 523</td>
<td>894</td>
<td>1 112</td>
<td>2 426</td>
<td>1 779</td>
<td>2 497</td>
<td>2 085</td>
<td>553</td>
</tr>
</tbody>
</table>

*Source: Cushman & Wakefield LLP, 2015; Forton, 2015.*

Data by countries and region overall, show that 2007 was undoubtedly the strongest year in drawing investments to office property. The total volume of investments in all the surveyed countries during the same year was 4,17 billion euro, which is significantly higher than the recorded values for the following peak years - 2008 (2,52 billion euro), 2013 (2,50 billion euro) and 2011 (2,43 billion euro). The years 2009 and 2015 hit record lows as the former was most reflective of the global crisis negative effects, whereas the latter reflects the oversaturation of office property market in most of Central European countries. Following 2011 there has been renewed investment activity in the region and only data for the end of 2015 can prove whether this trend will continue or another slowdown might be witnessed in the coming years.
In terms of investment volumes in 2007, Bulgaria managed to attract 314.6 million euros in investment which so far represents the largest volume for the country over the period surveyed. However if compared to other countries, these volumes are not so high (see Fig.1). Competition is only with Slovakia, the population of which is by some 2 million people less than that of Bulgaria but with twice stronger economy (Eurostat, 2015). Only in 2008, Bulgaria was able to attract more than 100 million euro (216 mln euro) in the office sector, with investments dipping considerably in the years to follow. The only exception to this trend were the years 2011 (48 mln euro) and 2014 (66 mln euro).

Source: Author’s estimates made on the basis of data by Cushman & Wakefield LLP, 2015 and Forton, 2015.

Fig. 1. Dynamics of the volume of investments in office properties

Summarized data show that the leader in terms of amount of investments drawn to the sector was Poland with 8.2 billion euro, which is double the amount of the Czech Republic, ranking second with 4.7 billion euro. (see Table 6).

The difference between the second and the third in rank, in this case Hungary (2.2 billion euro) is nearly double, despite the fact the both countries are almost similar in size of population unlike their economies – the economy of the Czech Republic is 1.5 times bigger than that of Hungary (Eurostat, 2015).
Total volume of investments in office properties for the period 2007-2015

<table>
<thead>
<tr>
<th>Countries</th>
<th>Total (in mln euro)</th>
<th>Relative share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovakia</td>
<td>466,4</td>
<td>2,6%</td>
</tr>
<tr>
<td>Hungary</td>
<td>2,245,1</td>
<td>12,4%</td>
</tr>
<tr>
<td>Rumania</td>
<td>1,668,6</td>
<td>9,2%</td>
</tr>
<tr>
<td>Poland</td>
<td>8,243,5</td>
<td>45,7%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>4,722,6</td>
<td>26,2%</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>697,1</td>
<td>3,9%</td>
</tr>
</tbody>
</table>

*Source: Author’s estimates based on data from Cushman & Wakefield LLP, 2015 & Forton, 2015.*

Despite its large population, Romania (1,67 billion euro) lags behind other Central European countries in investment volumes due to its slow economic development. As for Bulgaria with a total amount of investments of 697 mln euro made in office property, it occupies a place after Romania in the ranking table. The last is Slovakia which registered only 466 mln euro of investments. By its reported volume of investment, Bulgaria accounts for only 3,9% in total investments in office property of the countries concerned.

The following two indices give valuable information of the amount of investments in office property attracted in Bulgaria as compared to other countries: „Investments in office property per capita“ and „Percentage of investments in office property in GDP“ (see Table. 7).

Randomly selected indices of investments in office property in some European countries

<table>
<thead>
<tr>
<th>Countries</th>
<th>Investments per capita (in euro)</th>
<th>Percentage of investments in office property in GDP (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovakia</td>
<td>86</td>
<td>0,08%</td>
</tr>
<tr>
<td>Hungary</td>
<td>228</td>
<td>0,27%</td>
</tr>
<tr>
<td>Romania</td>
<td>84</td>
<td>0,14%</td>
</tr>
</tbody>
</table>
Thanks to these ratios, the countries from the survey can be compared more objectively since they take into account the differences in size of individual markets. According to the first indicator, the volume of investments in office property is compared to the population of the country, while with the second one – comparison is made according to the size of its economy.

Not only do the three biggest countries in Central Europe attract the highest investment volumes but they also generate the highest concentration of investments per capita. The Czech Republic stands out as the undisputed leader with 448 euro/person. Of the remaining three countries, Bulgaria with (97 euro/person) has the highest index value, beating Slovakia (86 euro/person) and Romania (84 euro/person). Taking into account the size of population of these countries, Bulgaria clocks a higher relative amount of investments compared to her direct competitors.

The value of annual average volume of investments in office property to GDP of the surveyed countries gives an almost similar picture to that of the previous indicator. Arguably, the leading position of the three largest Central European countries is indicative of the strongly felt economic effect of investments in the sector, despite the fact that these are the top three countries in terms of GDP in the region. Bulgaria follows with a slight difference (0,21%), ending ahead of Romania (0,14%) and Slovakia (0,08%). The difference in values between Bulgaria and the leading countries in this index is not so high due to the low level of GDP of the country.

The general conclusion about the above indicators is that Bulgaria has used more fully its potential to attract investments as compared to Romania and Slovakia. At the same time, the three biggest Central European countries stand out significantly in absolute and relative values of the indicators which testifies to a more mature stage of development of their markets.

One of the main advantages of the office real estate market in Bulgaria lies in its potential for development. Among evidence supporting this argument is the sudden decline in the level of vacancies. During 2009-2010 their share accounts for 20-24%, and currently it is below 15% (Economy.bg, 2015). These values do not apply to prime office space where there are almost/practically no vacancies. In addition, growing demand for office space can be attributed to the expansionary trend (in terms
of number of employees and size of revenue) in the IT and outsourcing sectors in Bulgaria. Reviews of the Bulgarian Outsourcing Association show that in 2014 alone, the number of people employed in the outsourcing industry in the country rose between 3 and 5 thousand, reaching a record high of almost 20-25 thousand people (Economy.bg, 2014a). Studies of the Bulgarian Association of Software Companies (BASCOM) did show that those employed in the IT sector reached nearly 17 000 by the end of 2014, with an annual increase between 6 and 10% (Elena Kirilova, 2014).

In the first half of 2015 an increase of 40% in demand for rent office space was recorded as compared to the previous year (Marieta Ivanova, 2015). During the same period of 2014 reported annual growth in the same sector accounted for 27% (Economy.bg, 2014b), exhibiting an upward trend. Breakdown of demand by tenants shows that 60% come from the sectors of IT and outsourcing activities (Marieta Ivanova, 2015). Future prospects for development of these two industries are upbeat. Thus for example, A.T. Kearney, a prestigious consulting firm described Bulgaria as the most attractive location for outsourcing of business processes in 2014 in Europe and the only European destination in the world top 10. (Paul A. Laudicina, Erik R. Peterson, Johan Gott, 2014). Moreover, the IT sector is seen as one of the most stable sectors in Bulgaria, exhibiting a two-digit annual growth in all the discussed indicators.

Hopefully, alongside economic upheaval and expected higher growth rates, other sectors might be actively involved in the provision of office property. Companies that are involved can be seen as new entrants on the market whereas old ones are likely to relocate to modern office property that can better meet their needs.

**Conclusion**

The present paper has focused on the development of the office real estate market in Bulgaria and other countries in Central and East Europe. Two basic indicators of the office property market have been studied – the rental segment and the purchase and sale of office property.

In summary of the above we can draw the following conclusions:

– The city with the highest growth rates in office property for the period 2007 - 2015 (6 m) is Sofia. The Bulgarian capital city represents a relatively small market, which by size of available office property outpaces only Bratislava which is smaller in population.

– In the sample survey of capital cities, the office real estate market in Sofia exhibits some of the lowest rental levels, i.e. owners of office property get lower rental rates than players in other competitive markets.
– Despite low office rents in Sofia, yields are soaring since costs of acquisition and construction of office buildings in Bulgaria are considerably lower than those in other sampled countries. Therefore, higher yields are among the main strengths of Sofia in the competition race for investors. This is also a distinctive feature of less developed markets with high risk levels.

– Purchase and sale activities in the sector are a direct reflection of the volume of investments in office properties. In terms of value, attracted investments in Bulgaria correspond to the size of the local market.

– Comparisons of countries in terms of investments per capita and share/percentage of GDP pointed to the leading role of the three biggest Central European countries. At the same time, these indicators positioned Bulgaria immediately before Romania and Slovakia in relative amount of capital invested in office property and realized purchases and sales in the sector.

– Fast developing sectors such as IT and outsourcing are seen as a powerful driver in the ever growing demand for prime office space in Bulgaria over the last few years.

– The state/government can encourage investments in office property directly or indirectly. Its direct involvement is through the introduction of certain incentives (tax relief, shorter procedures, and provision of infrastructure to ensure accessibility to the property, assistance in consolidating plots and large-scale investments in the country). Its indirect involvement can be seen in the creation of a favourable economic environment within which business units can operate successfully and thus stimulate the office real estate market.

The present study aims to prove that similar studies can be conducted for other segments of the commercial property – industrial property, retail property, hotels, etc. Using survey data, investors can get more insight into the commercial property market in Bulgaria, and the state will have more valuable information about what action should be taken to attract more investment in the sector of office real estate.

End Notes

1 Some of the sources use the index ‘Share of Gross Capital Formation in GDP’ (The World Bank, 2016). Said index is seen as equivalent to the indicator measuring the share of investments in GDP, used by the author of the present paper. Defining investments as gross capital formation is adopted by the System of National Accounting Standards (System of National Accounts - SNA, 2008). This methodology is used by the United Nations Organization, the International Monetary
2 Data for 2015 is presented in tables 1 to 5 for the first six months.
3 Use of the index „Rental of prime office space“ in relation to the unit of measurement „euro/ sq. m/ month“ is associated with estimates of rentals of office space worldwide (Cushman & Wakefield, 2014) which shows the price in euro per sq. m office space for rent per month.
4 The index „Share of investments in office property in GDP“ is formed by the ratio of the average volume of office investments for the period under study (2007-H1’2015) by countries in terms of the annual GDP (last update of data for 2013), calculated using the method of current prices.

References

EVOLUTION OF THE CONCEPTS OF ECONOMIC SECURITY

Liliya KORCHEVSKA

Abstract

World experience of legal maintenance of economic security has been studied. The formation of national economic interests and awareness of society are investigated. Evolutions of concepts of economic security in different countries have been considered. Features of the formation of the institutional and organizational basis for the economic security have been studied. The chronological incorporation of key legislative acts in the sphere of economic security has been developed. Monitoring international economic law, foreign and domestic legal acts have been conducted. In turn, this allowed tracing the sequence of signing and organizing documents to use them easily in practice.

Introduction

The security issue resonates in a new era of geo-strategic reality. The reason for its occurrence is very transparent. It is the exponential growth of threats to humanity and they are multidirectional. Among the threats are the following: destabilization of the system of international economic relations, the high degree of uncertainty of actions of participants of the economic space, disintegrative tendencies, the escalation of international tension, permanent emergence of global and local crises, the limitations of the world’s resources and their high cost. Recently, the security of state, the security of enterprise and the security of individual is not treated separately. They are interconnected and interdependent. If any objective or subjective reasons (such as war) constitutes a threat to national security, it is a threat also to an enterprise and to an individual. The study of the world experience in solving complex problems of economic security of enterprise and institutionalization are relevant. Thus, the international institutions manage global economic security and generate international economic law, which is an important means of supporting it. The state institutions manage national economic security. They are the main repeater rules and laws that provide it.

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The subjects of research are the theoretical bases of formation of the science of security as an independent direction of economic research. The objects of the research are the key legislative acts in the sphere of economic security.

The purpose of this research is to study the international experience of becoming the science of security, historical and legal analysis of concepts of national economic security.

Scientific problems have been solved to achieve this purpose:
1. Monitoring of international economic law, foreign and domestic legal acts in the sphere of economic security.
2. Systematization of the existing law in the sphere of economic security by combining the legal acts in chronological order.

The methods of scientific research are classification and the particular historical, comparative legal and formal juridical methods.

**Historical retrospective of economic security**

New challenges are increasingly promoting scientific thinking in the search for answers in the area of economic security. It is therefore necessary to understand how and when the term „economic security“ emerged and how it acquires economic overtones.

In times of Kievan Rus (11 century) Yaroslav Wise published „The Russian Truth“, which was the first code of laws. The cornerstone of this document is personal and property security, namely the preservation of internal order in the country and the protection of property of wealthy people. The main value was this freedom.

In 1648 the Peace of Westphalia was signed. It was the first modern diplomatic congress. It became the basis for a new international order in Europe. The philosophy of achieving a steady state of the state was based on the concept of national security (MacFarlane, FoongKhong, 2006).

The author studied the texts of important basic laws of foreign states during the Renaissance and the Enlightenment, which are the basis of the legal security framework. Thus, „The Bill of Rights“ was indicated that the security of the people depends on the definition of rights to Crown, namely from succession. In „The Declaration of Independence“ there was confirmed the thesis of the impossibility of safe development of the nation, without guarantees of security of each individual citizen. This document declared free choice of a new government that would ensure the safety and well-being. In „The Declaration of the Rights of Man and of the Citizen“ (1885) it was said: „The aim of every political association is the provision of natural and inalienable human rights. This is liberty, property, security and resistance to oppres-
sion“ (Article 2). Later the French Commercial Code was adopted in 1808, which contributed to the unification of commercial law of European countries. It emphasized the important principle – freedom (National Center for Constitutional Studies, 2016).

The international organization the League of Nations was created in 1919-1920, which was formed as a result of signing of Treaty of Versailles. Already from 28 September 1934 to 23 February 1935 the League of Nations included 58 participating countries. In World War I the objectives of the League of Nations included: disarmament, the prevention of war, collective security, settlement of conflicts between the two countries through diplomatic negotiations and improving the quality of life on the planet. The organization ceased to exist in 1946 as a result of failing to prevent World War II.

The Great Depression (1929-1933) swept the entire system of international financial relations, during which many states declared financial bankruptcy. The 32nd President of the USA Franklin Roosevelt was forced to develop a rapid response measures to eliminate the negative impact of world economy on the national one. The First Federal Committee on Economic Security was established.

In 1934 „The National Security Strategy of Engagement and Enlargement“ was approved. The concept was introduced in this document: „national security is a set of conditions that reliably provide national sovereignty, protection of strategic interests and full development of the society, the life and health of all its citizens“.

In 1934 the term „state security“ was introduced in the era of the Soviet Union. The Main Administration of State Security as part of the NKVD was created. So, in 1936, the term was been officially included in the text of the Constitution of the USSR and was used in the documents and acts of organs of the Soviet state, the Soviet legal literature. The Soviet ideology and legislation of the totalitarian society was based on the dominance of state interests over the interests of the nation (state security over national) (Agadullin, 2007).

During World War II the power was the main means of ensuring the interests of the states. Thus, policy and strategy of national security focused on the hard military action. The „soft“ political, economic and other measures were not applied. K. Marx noted aptly, if two equal rights found, decides to force. That is, if the state reaches a level of economic potential and military power, which is equivalent to the capacity and power of the leading countries in the world, it demands for itself a new status and starts the distribution of spheres of global influence.

In the postwar period the economy had to be restored. Security was linked to the prevention of war. After all governments had to ensure its sovereignty and independence,
then they reoriented forces to internal processes. Particular attention was paid to the economic processes that reflect the situation of the country in the international division of labor and a threat to the welfare of the country.

Again there was the need to establish an international institution that would provide support and strengthening of international peace and security, the development of cooperation between the countries. On October 24 1945 this institution was the United Nations (UN), the predecessor of which was the League of Nations. Its creation caused a lot of disputes between States concerning the competence of the United Nations. The USA proposed a structure that would solve not only political, but also socio-economic problems. USSR insisted on the creation of a structure that would only deal with the political aspects. It is support of the peace and security. Representatives of the USSR considered that the international economic decision would be contrary to the principles of the internal issues of sovereignty and non-interference in the internal affairs of the country. The United Kingdom also insisted on a limited intervention of an intergovernmental organization, referring to the incompatibility with the principles of market liberalism and the inviolability of private property. Therefore, in the UN Charter a compromising position was made. Yet, its purpose is still a co-operation in solving international problems of an economic, social, cultural or humanitarian character (p. 3, Article 1 of the UN Charter).

The UN promotes: higher standards of living, full employment, and conditions of economic and social progress and development; solving international problems in economic, social, health and related problems; international cooperation in the field of culture and education (Article 55 of the UN Charter). Thus, the United Nations provides the institutional process of legalizing collective economic security for solutions.

Rooting of the modern meaning of the term „national security“ occurred after the end of World War II. In August 1945, the US naval minister John Forrestal said: „Our national security can be achieved in a very broad and comprehensive sense. I’m using the word „security“ constantly and consistently, but not „defense“. J. Forrestal offered non-standard interpretation of this concept, since he had to clarify his point: „The issue of national security is not just a question of the army and navy. We must consider all our potential for war, our mines, industry, human resources, science and other areas that make up the normal civilian life“ (Post, 1985).

In 1947 the US National Security Council was created and „The National Security Act of 1947“ was approved (The National Archives Catalog, 2015). In document it was noted that security is a condition for the functioning of the state and is the result of
the defense (safety) measures that improve the invulnerability of the state against threats from the outside or from the inside in an open and subversive form. The concept of „economic security“ was not used in the document, but particular attention was paid to the economic aspect of the problem. One of the key provisions of the law, which defines the principal directions of regulation of social relations, is the following standard: „We proceeded from the fact that the line between domestic and foreign policy disappears. We need to revive the economy, to support the armed forces, initiatives abroad and global influence. We must take an active part in international affairs, to open foreign markets and create jobs for Americans“. This statement has been defined by the US national interest. Economic objectives of US national security were: 1) „economic recovery“. Ensuring security of the US should contribute to economic growth; 2) „international engagement“ was a necessary condition for improving the economic well-being of the state. The increase in resource potential was achieved through the use of the resource potential of the world economy. The means to achieve these objectives were „opening of foreign markets to US goods and services“. The terms „target“, „interests“ and „threat“ were used in The National Security Act (Strelnikov, 2009).

In October 1947 the General Agreement on Tariffs and Trade (GATT) was concluded for the first time in human history. The purpose of this revival of international trade was reduction of customs tariffs and the removal of restrictions on the import of goods that will contribute to the economic security of the country.

The Japanese Prime Minister Yoshida Shigeru developed the doctrine. The main directions of the post-war Japan’s national security policy were the rapid economic development, rapid cut in military spending and a close alliance with the United States.

It was the doctrine of economic nationalism (practical nationalism) whose main aim was the development of the Japanese economy under the US nuclear umbrella. A state policy to ensure economic security began with „On Emergency Measures in the sphere of Finance and Economy Law“. For its implementation two special state organs were created – The Bureau of Economic Stabilization and a Committee to Regulate Prices. They were engaged in drawing up national plans in the area of production and distribution, controlled enterprises provided with raw materials, labor, finance, and others. The state helps private companies to improve the quality of their products and to increase its competitiveness in the global market. This has led to an increase in the flow of foreign currency that enters the country. As a result of government measures the Japanese „economic miracle“ took place (Kaschenko, 2006).

In 1957 in France the General Secretariat of National Defense was created, which was in charge of the economy, along with the issues of military defense, diplomacy, scientific and technical research.
In the same year the Treaty of Rome establishing the European Economic Community and Euratom was signed between countries such as Germany, France, Italy, Belgium, Netherlands and Luxembourg. It made stipulations about the elimination of all obstacles to the free movement of people, goods, services and capital.

In 1964 „The Principles governing international trade relations and trade policies to promote development“ were declared at the first United Nations Conference on trade and development (UNCTAD). They should contribute to the solution of problems of trade, finance, debt, investment, technology transfer. This should contribute to accelerate economic development, especially in developing countries.

In 1967 in Brazil the idea of „collective economic security“ was proposed. Instead of signing the Treaty on the Non-Proliferation of Nuclear Weapons, the Treaty of Tlatelolco was signed. The first parts of the world prohibiting nuclear weapons were Latin America and the Caribbean. This contributed to peace and international security (Lima, 2015, p.105). In fact, the idea was very beneficial to developing countries. The term „collective economic security“ is not declared in official documents.

The UN consultant J. Nye notes that the issue of „collective economic security“ was discussed in July 1974 at the 57th session of UN Economic and Social Council in Geneva. This issue was offered by the developing countries to put pressure. They relied on the International Strategy of Development for the Second Decade (Nye, 1974). Of course, the most developed countries took note of this concept with caution and skepticism. Therefore, based on this concept is an undeveloped legal norm.

In 1973 the Organization for Security and Cooperation in Europe (OSCE) was created. The formal organization has become an important element of modern architecture of European security. Its activity is related to the reduction of military confrontation and to enhancing security, including economic one. OSCE includes 56 member states, which are located in Europe, Central Asia and North America.

From 1973 to 1975 „The Conference on Security and Cooperation in Europe“ was carried out. The Conference was called the „Helsinki Accord“ (it was based on the initiative of the USSR and the socialist countries in Europe). The measures to strengthen economic security in Europe were adopted in the course of the forum. Among the participants were 33 European countries, USA and Canada. The Conference was held in three phases. A „Final Act of Conference on security and cooperation in Europe“ was signed. It covers issues such as: cooperation in the area of economy, science and technology, the environment, business contacts and opportunities, economic and commercial information, marketing, industrial cooperation, economic and social aspects of labor migration.
Problems of economic security began to worry the world after the energy crises. They emerged after the ultimatum that was presented by countries-suppliers of developed countries in 1973. The termination of supplies of energy had led to large losses and slowed the development of the economic “strength of this world“ (the US, Europe and Japan). This had prompted rich countries to solve the problem of economic security to prevent similar actions in the future and find ways to overcome the consequences. The usual military threats did not work: the owners of fields warned that if a military intervention took place, they could set fire and undermine a field. This could lead to a worldwide environmental catastrophe. Therefore, economic and political means of influence began to dominate. World leading scientists were involved. They laid the foundations of the new science of international economic security (Pasternak-Taranuschenko, 2002, p. 7).

Industrialization and inequality of states defied the world community. Fundamental documents appeared in international economic law: in 1974 the UN General Assembly – „Declaration on the Establishment of a New International Economic Order“, „Charter of Economic Rights and Duties of States“, „Programme of Action on the Establishment of a New International Economic Order“; in 1975 the „Lima Declaration and Plan of Action on industrial development and co-operation“ was adopted at the Conference of the UN Industrial Development Organization (UNIDO); in 1979 a resolution „Progressive development of the principles and norms of international law relating to the new international economic order“ was adopted at the UN General Assembly.

The concept of a new international economic order was designed for the developing countries to achieve particular preferences in the economic sphere. Thus it created favorable conditions for raw materials, industrial exports, credit and the monetary system; sponsorship of advanced technologies and limitation of the activities of TNCs. The Declaration called upon the developed countries to make special concessions in all areas of international economic cooperation for developing countries, based on the principles of nonreciprocal unidirectional mode.

The most important international legal instruments relating to the institute of international economic security are: „Rejection of coercive economic measures“ (resolution IV session UNCTAD, 1983); „Economic measures as a means of political and economic coercion against developing countries“ (resolution of the 38th session of the UN General Assembly, 1983); „On measures to enhance confidence in international economic relations“ (resolution 39th session of the UN General Assembly, 1984) (Dahno, 2009, p. 21).

All of them led to the creation in 1985 of a resolution at the 40th session of the UN General Assembly „International Economic Security“. The concept of „international economic security“ received an official status. The document argued that common
efforts to establish fair and mutually beneficial international economic relations would contribute to the economic well-being of each country and the creation of a new international economic order. This concept is universal. It is based on the equal provision of the economic security of all States on the conditions of partnership: for developed and developing countries. In 1987 the definition of economic security was not present in the resolution of the 42nd session of the UN General Assembly again.

In 1982, representatives of the Ministry of Foreign Trade and Industry of Japan made a report. They pointed out that „international economic security is a state of the economy that is protected from the serious threats that arise under the influence of international factors by economic means“ (Economic Security of Japan, 1982).

In the early 1990s the main types of security were economic, financial, environmental, information. The main threats were increasing economic, scientific and technological competition from the developed countries, so US intelligence shifted the emphasis of its activities from the scope of the military-political sphere in global business.

In 1992 „The Treaty on European Union“ or the Maastricht Treaty was concluded. Responsibility in the area of security policy as well as the joint jurisdiction is vested in the European Union (EU). Among the basic principles can be identified: strengthening the security of the EU; the preservation of peace and international security; increasing the sole role of the EU in defining the common foreign policy.

In 1992, ECOSOC established the Commission of Sustainable Development, which developed the same name strategy. Its main focus is the sustainable economy that does not destroy the basic natural resources, developed by adapting to the environment, using the latest scientific developments and technological innovation. Eradication of poverty, especially in developing countries is also one of the areas of the sustainable development strategy. This problem is closely related to economic security, because poverty can cause social tension and undermine the economic development of the neighboring countries, and they will be forced to accept on its territory people who are fleeing from hunger and poverty (Ganushkina, 2012, p. 10-33).

**Monitoring of the modern concepts of national economic security**

In March 1992 in Russia the „Security Act“ was approved. It examines the relationship of internal and external aspects of security, without defining its economic aspect. In 1996 Russia regulated economic security in the document „The state strategy of the economic security of Russian Federation“. There are major sections: the purpose and objects of economic security strategy, its threats, criteria and parameters
for the economy, which meet the requirements of economic security, measures and mechanisms of economic policy aimed at providing it. In 1997 the „Russian Security Concept“ was issued. In 2009 the „National Security Strategy of Russia“ was approved. It is dedicated to „economic growth“ after the global financial crisis of 2008 and also „strengthening the economic security through active government anti-inflation, monetary, exchange rate, monetary, fiscal policy aimed at import substitution and supporting real economy“.

On July 1, 1992 in Ukraine the National Security Council under the President of Ukraine was created. In 1993 the first scientific papers on this topic were published. In January 1997 the resolution of the Verkhovna Rada of Ukraine „The National Security Concept of Ukraine“ was signed. This document lays the foundations of the conceptualization of the state policy of national security that allowed defining clearly the subjective and objective attitude. In 2003 the law on the bases for National Security of Ukraine was signed. The concept of „economic security“ was not used, but it is part of the national security of Ukraine. National security is a level of protection of vital interests, rights and freedoms of the person, the vital interests of society, the state and its environment from external and internal threats. In February 2007 the „The National Security Strategy of Ukraine“ was approved.

In November 2008, the Resolution „The Concept of economic security of Ukraine Consumer Cooperatives“ was accepted. For the first time „economic security“ was mentioned in the legal document. Economic security is the state of protection of business entities from the negative influence of external and internal threats, destabilizing factors, which provides a robust implementation of major economic interests and objectives of the authorized activities. In May 2014 a project law „The basis preventing and combating economic crimes and financial control“ was proposed. Economic security is the state of the economy in which sustainable economic growth effectively meets the economic needs, controls the state over the movement and use of national resources, the protection of the economic interests of the country on the national and international levels. Economic security is an integral part of national security“. In May 2015 „The National Security Strategy of Ukraine“ was adopted after conflicts and ethnic tensions. This is the first document that is designed for comprehensive protection of the national security and territorial integrity of Ukraine. The main threats to national security are: the aggressive policy of Russia; the inefficiency of the system of national security of Ukraine; corruption and inefficient system of government; economic crisis, depletion of financial resources of the state, the decline in living standards; threats to energy, information, environmental and technological safety.
In November 1992 in Poland the law based on the Polish security policy and „Security policy and defense strategy of the Republic of Poland“ were approved (Mróz, 1994). In January 2000 „The Security Strategy of Poland” was developed. In 2003 „The National Security Strategy of the Republic of Poland“ was approved (Kupiecki, 2015). It considers the economic threat instead of economic security.

In the spring of 1994 in FRG the document „White book on the question of security policy of Germany and the future Bundeswehr“ was approved, relying on the defense doctrine. In 2006 the document was revised and it updated aspects of economic security, among which the main ones are free world trade as the basis for the country’s well-being and prevention of regional crises that could threaten the security of Germany. The strategic importance is attached to a reliable supply of energy resources of the country. In 2002, the „National Strategy for Sustainable Development“ was developed. The document notes that Germany should become one of the leading countries in terms of resource efficiency of the economy. A sustainable economy is adapting to the challenges of our time, the use of economic opportunity and the responsibility of businesses for the future. Sustainable development is a significant competitive advantage.

In December 1995, the US President George W. Bush approved the memorandum with a view to taking appropriate measures to ensure economic security. The memorandum outlines the main content of the national program of economic security. The result of the program is to create a unified system of economic security across the country. It aims to maintain US leadership in technological areas and to ensure the country’s economic interests. In 1996, the US „Economic Security Act“ was passed, where for the first time the problem of economic espionage was addressed. Since 1992, US business has borne an annual loss of 100 billion dollars as a result of industrial espionage on management estimates of Science and Technology of the White House. Almost 40% of the country’s resources, the intelligence community (all US intelligence services) were allocated to economic intelligence (Gorodetskiy, Manaenkov, 2004, p. 25-26).

In 2001 „The Economic Security and Recovery Act“ was adopted which identified the priorities of economic development, protection and optimization of taxation issues. In 2002 the „First National Strategy for Homeland Security“ was adopted (Official website of the Department of Homeland Security). In February 2015 the „National Security Strategy“ was approved. Threats to national security include: an attack on US territory and critical infrastructure, on American citizens and representatives of the countries-allies outside the country; the global economic crisis; application and dissemination of weapons of mass destruction; epidemics of infectious diseases; the negative effects of climate change; disruption of the functioning of the global energy market; the spread of violence and crime with unstable countries in the territory
of USA were willing to participate in the education of „future political and economic elite in the world“. The United States expressed willingness to participate in the education of „the future political and economic elite in the entire world“.

In 1997 the Law of China „On Civil Defense“, the White Paper of China „Civil Defense“ (2000, 2002, 2004, 2006) were adopted. In 2008 the Chinese scientist Jiang Yong gave a definition of economic security: „Economic security is best defined as the ability to provide a gradual increase of living standard of the entire population through the national economic development while preserving the economic independence. In other words, there are two sides of the „medal“ in the economic security: competitive and independent economic sovereignty“. Today it is necessary to recognize the world economic and political power of China, which claims to be the new „center of influence“ through the use of scientific, technical and industrial potential. In fact, its success is based on two components – economic security, namely „economic integration with its neighbors in the region“ and political security, namely „the creation of a peaceful environment“ (Jiang Yong, 2008, p. 66-85).

In 1998 in Bulgaria „The Concept of National Security of the Republic of Bulgaria“ was adopted. It addresses threats to security: economic and social differentiation of countries in Europe, the unfinished process of constructing European security, the availability of economic crime, the use of financial and economic sanctions on other countries, an unstable state of the economy in the country and others. The concept has ceased to operate on the basis of the adoption of the new „National Security Strategy of the Republic of Bulgaria“, where the economic, financial and social stability and economic prosperity stand out among other interests.

In 1998 in the Czech Republic „The Constitutional law on Security of the Czech Republic“ was adopted. Later „The Security Strategy of the Czech Republic“ was approved, which outlines the economic situation of the formation of long-term policies to promote the economic development of the country. Among them, the development of international cooperation, the reduction of inflation, the fight against economic crime.

Today, the system of economic security is developed in the framework of the European Economic Commission of the Council and the OSCE. Since 2003, the documents that make up the „economic and environmental dimension of security“ have been adopted jointly. Information about the economic and environmental challenges and threats to security and stability in the OSCE region are systematized and monitored with the help of the Office Coordinator of OSCE Economic and Environmental (Ganushkina, 2012).
Legislative framework of economic security

Chronological incorporation of key legislative acts in the sphere of economic security is presented in Table. 1.

**Table 1**

<table>
<thead>
<tr>
<th>Date of signing</th>
<th>Action area</th>
<th>Legal document</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 century</td>
<td>Kievan Rus</td>
<td>Code of laws „The Russian Truth“</td>
</tr>
<tr>
<td>16 December 1689</td>
<td>England</td>
<td>„The Bill of Rights“</td>
</tr>
<tr>
<td>4 July 1776 p</td>
<td>USA</td>
<td>„The Declaration of Independence“</td>
</tr>
<tr>
<td>26 August 1789</td>
<td>France</td>
<td>„The Declaration of the Rights of Man and of the Citizen“</td>
</tr>
<tr>
<td>14 August 1881</td>
<td>Tsarist Russia</td>
<td>„Regulation on control for public order and public security“</td>
</tr>
<tr>
<td>28 June 1919</td>
<td>5 participating countries</td>
<td>The Treaty of Versailles and creating the League of Nations</td>
</tr>
<tr>
<td>29 June 1934</td>
<td>USA</td>
<td>„The National Security Strategy of Engagement and Enlargement“</td>
</tr>
<tr>
<td>16 February 1946</td>
<td>Japan</td>
<td>„On Emergency Measures in the sphere of Finance and Economy Law“</td>
</tr>
<tr>
<td>26 July 1947</td>
<td>USA</td>
<td>„The National Security Act“</td>
</tr>
<tr>
<td>30 October 1947</td>
<td>32 participating countries</td>
<td>„The General Agreement on Tariffs and Trade (GATT)“</td>
</tr>
<tr>
<td>25 March 1957</td>
<td>6 participating countries</td>
<td>The Treaty of Rome establishing the European Economic Community and Euratom</td>
</tr>
<tr>
<td>15 June 1964</td>
<td>Countries – UN member</td>
<td>„The Principles governing international trade relations and trade policies to promote development“</td>
</tr>
<tr>
<td>1 May 1974</td>
<td>Countries – UN member</td>
<td>„Declaration on the Establishment of a New International Economic Order“</td>
</tr>
<tr>
<td>12 December 1974</td>
<td>Countries – UN member</td>
<td>„Charter of Economic Rights and Duties of States“</td>
</tr>
<tr>
<td>1 August 1975</td>
<td>33 participating countries</td>
<td>„Final Act of Conference on security and cooperation in Europe“</td>
</tr>
<tr>
<td>17 December 1985</td>
<td>Countries – UN</td>
<td>„International Economic Security“ (resolution 40th</td>
</tr>
<tr>
<td>Date</td>
<td>Countries/Member</td>
<td>Session/Resolution</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11 December 1987</td>
<td>Countries – UN member</td>
<td>„International Economic Security“ (resolution 42th session of the UN General Assembly)</td>
</tr>
<tr>
<td>7 February 1992</td>
<td>12 participating countries</td>
<td>„The Treaty on European Union“ or the Maastricht Treaty</td>
</tr>
<tr>
<td>5 March 1992</td>
<td>Russia</td>
<td>„Security Act“</td>
</tr>
<tr>
<td>2 November 1992</td>
<td>Poland</td>
<td>The law on the basis of Polish security policy. „Security policy and defense strategy of the Republic of Poland“</td>
</tr>
<tr>
<td>15 April 1994</td>
<td>Germany</td>
<td>„White book on the question of security policy of Germany and the future Bundeswehr“</td>
</tr>
<tr>
<td>1 February 1996</td>
<td>USA</td>
<td>„The Economic Security Act“</td>
</tr>
<tr>
<td>29 April 1996 p.</td>
<td>Russia</td>
<td>„The state strategy of the economic security of Russian Federation“</td>
</tr>
<tr>
<td>16 January 1997</td>
<td>Ukraine</td>
<td>„The National Security Concept of Ukraine“</td>
</tr>
<tr>
<td>17 December 1997</td>
<td>Russia</td>
<td>„Russian Security Concept“</td>
</tr>
<tr>
<td>16 April 1998</td>
<td>Bulgaria</td>
<td>„The Concept of National Security of the Republic of Bulgaria“</td>
</tr>
<tr>
<td>13 December 1998</td>
<td>Czech Republic</td>
<td>„The Constitutional law on Security of the Czech Republic“</td>
</tr>
<tr>
<td>18 June 1999</td>
<td>Romania</td>
<td>„National Security Strategy of Romania“</td>
</tr>
<tr>
<td>19 November 1999</td>
<td>54 participating countries</td>
<td>„The Charter on European Security“</td>
</tr>
<tr>
<td>4 January 2000</td>
<td>Poland</td>
<td>„The Security Strategy of Poland“</td>
</tr>
<tr>
<td>10 December 2001</td>
<td>USA</td>
<td>„The Economic Security and Recovery Act“</td>
</tr>
<tr>
<td>17 July 2001</td>
<td>Belarus</td>
<td>„The Concept of National Security of the Republic of Belarus“</td>
</tr>
<tr>
<td>19 June 2003</td>
<td>Ukraine</td>
<td>The Law on the bases for National Security of Ukraine</td>
</tr>
<tr>
<td>12 February 2007</td>
<td>Ukraine</td>
<td>„The National Security Strategy of Ukraine“</td>
</tr>
<tr>
<td>12 November 2008</td>
<td>Ukraine</td>
<td>„The Concept of economic security of Ukraine Consumer Cooperatives“</td>
</tr>
<tr>
<td>12 May 2009</td>
<td>Russia</td>
<td>„National Security Strategy of Russia“</td>
</tr>
<tr>
<td>9 November 2010</td>
<td>Belarus</td>
<td>„The Concept of National Security of the Republic of Belarus“</td>
</tr>
</tbody>
</table>
One can note the difference in the titles of documents in various countries. For example, in Canada and Turkey – „National Security Policy“; in the United States, Poland, Hungary, Romania, Bulgaria, Lithuania, Ukraine, Russia – „National Security Strategy“; Italy – „The strategic concept of national defense“; in the UK, Germany, Norway, Ireland, China, Japan the documents are called „White Book“. Of course, it is impossible to explore all legal documents related to economic security for all countries. The aim was to monitor historically the first documents that regulate economic security and provide a detailed study of foreign concepts, which broadcast leaders’ views on economic security.

**Conclusion and recommendations**

The chronological incorporation of key legislative acts in the sphere of economic security has been developed for the first time. Monitoring of international economic law, foreign and domestic legal acts has been conducted. In turn, this allowed tracing the sequence of signing and organizing the documents for using them easily in practice.

Comparative evaluation of the effectiveness of existing systems of national security of different countries showed that the United States is a leader in the history of mankind as to the completeness and effectiveness of doctrinal documents relating to economic security. The best proof is the sustainable development of the US economy and the increased competitiveness of goods and services. For example, in 2014 the United States ranked third in global competitiveness, Bulgaria – 54th place and Ukraine – 76th place (The Global Competitiveness Report 2014-2015, p. 13). The position of Ukraine in 2014 improved with 8 positions compared to 2013. However, it should be noted that recent events have not been taken into account, namely the Russian-Ukrainian conflict and the disruption of trade relations. Also in 2015 among the 100 largest companies in the world by level of capitalization: 53 – US, 9 – English and 8 – Chinese. Unfortunately, there is not a single Ukrainian or Bulgarian company (FT Global 500).

The study of foreign experience in the development of the legal framework of economic security will be valuable when enriched, and at the same time will take into account the positive and negative consequences. Efforts should be directed at achiev-
ing stability and equitable political and economic cooperation in terms of international security and trust.

Thus systematization of general economic and civilization processes as well as the synthesis of planetary and concentrated knowledge gives us hope that humanity is aware of the irreversible consequences of socio-economic and environmental disasters, war and conflict, recognizing the imperative of following progressive safety objectives and uniting efforts in solving global problems.

References


THE INFLUENCE OF INNOVATION ON INCREASING THE COMPETITIVENESS OF INDUSTRIAL ENTERPRISES

Viktoriya KALAYDZHIeva

Abstract

The article discusses and analyses some of the existing methods of measuring innovation and competitiveness, as well as the factors for their increasing. However, the lack of methodology of evaluation of the role of the innovations in increasing competitiveness makes it difficult to adopt an approach to analysis and assessment of this influence. Therefore the main goal of the author is to propose a set of methods that involve the use of objective models and appropriate means of analysis and assessment of innovation activity and its influence on industrial enterprises competitiveness.

Introduction

The main goal of this article is, on the basis of the existing methodologies which measure and assess innovations, competitiveness and the factors for their increase, to propose a new complex methodology which involves the use of objective models and appropriate means of analysis and assessment of the interrelation between innovation and competitiveness.

In order to achieve her main goal, the author sets the following tasks: research and assessment of the situation of industrial enterprises and their innovation activity; establishing the level of innovation activity using NSI (National Statistical Institute) data; a selection of analytical-assessment indicators for the statistical categorization of industrial enterprises, making suggestions for stimulating the innovation activity of industrial enterprises as a prerequisite for the increasing of competitiveness.

The topicality of the studied problem is mainly connected with the following: the key importance of the industrial sector for the development of national economy; the great importance of innovation and competitiveness for the economic growth; the leading role of innovation activity for maintaining a high degree of adaptability of the enterprises to the dynamic changes in a highly competitive environment; the role of innovation in increasing competitiveness and building a competitive national economy.

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Analysis, assessment of the current state of innovation and discussion

The obvious relation between innovation and competitiveness necessitates the application of appropriate methods including the use of objective models and the appropriate means of analysis and assessment.

One of the first authors to discuss the role of innovations in the emergence of a new type of competitiveness, a more active one than price competitiveness is Schumpeter (1982, p. 146; 153; 277). The problem of the interrelation between innovations and competitiveness has been delved into by a number of other scholars, including Kraft and Kraftova, (2009, p.53-70), Raizberg (2008, c.35-39), Damyanov, Beluhova (2012, p. 191).

There are methods of assessing the innovation projects which are applied both in literature and in practice. Some authors use the dynamic methods, which are employed for assessing the investment projects, while others evaluate the possible alternatives of process innovations based on the expected economic results. Nedeva (2012, pp. 147-154), Yankova (2011, pp. 129-133). However, these methods are not connected with studying enterprises innovativeness.

It may be claimed that there are certain methods for measuring innovation and competitiveness, but there is no methodology for evaluating the role of innovations in raising competitiveness. This fact raises the question of the choice of a system of indicators for the analysis and assessment of this influence.

When characterizing innovation activity, we most frequently start from classifying the innovations as product, technological and organizational, which suggests assessment should include the following characteristics:

- Implementing products with new features;
- Using new technologies;
- Using new machines and equipment;
- Changes in the organization of production;
- Changes in staff qualifications.

The complex nature of innovation activity and the different aspects of innovation predetermine part of the difficulties connected with its objective measurement. As for the analysis and assessment of the state of the European and national parameters of innovation, there are developed methodologies and considerable regular research is carried out. A system of indicators of Research and Development Activities (RDA) is also maintained together with the site about innovation of the National Statistical Institute (NSI) and Eurostat. The following aspects are essential to conducting the research in this direction: the aggregate innovation index of the European Union
Innovation Scoreboard, which divides the countries in four groups according to the dynamics of innovations compared to the average level of the EU during the last year and gives an assessment based on several groups of indicators and the methodology of knowledge assessment, which includes 80 structural and quality indicators, covering the four economic concepts of knowledge. (http://ec.europa.eu/enterprise/policies).

Another assessment methodology takes into account the dynamics of the factors which influence innovativeness and the necessity of comparability of the data with regard to the selection of the key factors of this type. It uses the index method and includes determining a system of indexes, as follows: „Access to financing“, „Innovation activity“, „Good Practices“, „Internationalization“, „Activity regarding the intellectual property“. Simeonova-Ganeva, Vladimirov and team (2013).

The calculation of these indexes provides an opportunity to assess the innovation activity itself, as well as the factors for its increase. Simultaneously, these indexes also bear a relation to the competitiveness of the enterprises, therefore, they can be used with equal success in the assessment of the competitiveness, too.

The indexes described above allow the implementation of elements of descriptive statistics, frequency allocations, rank criteria for examination of the correlations between the individual factors and creating new adequate models of multiple linear regressions with the basic aim to access the impact of the factors involved in the indexes for innovation (ibid.).

Various methods are also applied in studying competitiveness. According to R. Dimitrova (2014, p. 157) „the problem of creating a measurement toolkit and the selection of methods of analysis and assessment of competitiveness of enterprises has not been adequately answered“. In order to characterize enterprise competitiveness, Mladen Velev suggests the following means of measurement: production competitiveness; labor productivity; financial results; growth of the enterprise; innovativeness; industrial and marketing flexibility; adaptability to the market. Velev (2004 pp. 74-75). It is clear that innovativeness is present as a component of this model. Some authors calculate product competitiveness against product analogues as a ratio between the evaluated product and the basic product, which is used for the comparison of the different parameters – technical (based on the operational parameters of the two products), economic (based on the price – the expenses and consumption of the two products) and finally an integral indicator of competitiveness is arrived at Donchev, Velev, Dimitrov (1998, pp. 267-270). In some methodologies, accounting and statistical bookkeeping indicators are used, as they measure the results of the enterprise activity or the level of the quality of the products. In others, the calculation of the competitiveness of the products is based on predeterminating the
needs of the potential buyers and assessing the degree of satisfaction, which they would get because of the quality of the new product of the enterprise, as compared with competitors’ products and afterwards an indicator is calculated by referring the value of each parameter of the real product to the value of the corresponding parameters of the hypothetical product, and an assessment of the economic parameters is also made. Marinov, Velev, Geraskova (2001, pp. 146-150).

Another possible method of assessing product competitiveness is based on the products’ life cycle in the sphere of consumption in the process of its usage. (ibid. pp. 150-153).

In M. Poter’s view (2000), national competitiveness is largely dependent on the potential of its industry for innovation and the technological development. When competitiveness is assessed, the model of M. Porter’s five forces driving competition is used – a direct competition among existing competitors, a threat of new entrants, the bargaining power of consumers, the bargaining power of suppliers, the impact of substitute products. Porter (2004, p. 59). What is also applied is the chainlike value model for assessment and projection of enterprise competitiveness, as well as a model of competition and key factors for the success of the enterprise, which is built on the basis of the hierarchy of the key factors for achieving a competitive advantage. Marinov, Velev, Geraskova (2001, pp. 155-158).

Some authors consider the quality of the product as the sole and most important indicator of corporate competitiveness. A complex index is also used and it measures the quality and competitiveness or a comparison is made with the best known practices or with the leading competitor.

Methods of research

It should be pointed out that the literary sources we have studied do not offer any methodology of studying the influence of innovations on raising competitiveness.

The methodological approach we have adopted to analyse and assess the state and level of the economic activity of the industrial enterprises enables us to compile a suitable measuring toolkit which includes a system of indicators that reveal the economic aspects and the statistical methods for their evaluation. That is why we believe that although it is appropriate and possible to add more indicators, this measuring toolkit is suitable and applicable, because this approach combines the study of the state of the industrial sector in Bulgaria, the level of innovation activity and the role of innovations in raising competitiveness. In this regard, we consider that empirical research should cover the following directions (Figure 1):
Fig. 1. Directions of empirical research

In accordance with the defined goals and tasks of the research in this field, we propose the following algorithm (Figure 2):


Fig. 2. Algorithm of the research
Each stage of the conducted research is distinguished by certain specifics regarding the particular approaches, the studied indicators and the methods of analysis and assessment.

In the framework of a questionnaire survey, carried out by the author, 126 industrial enterprises owners and managers from the Blagoevgrad region were interviewed over the period between 2006 and 2013. NSI’s classification was used. (Business Statistics, Multi-Domain Statistics, www.nsi.bg). The general analysis and conclusions that were made regarding the studied problems were based on these data.

The analysis of the assessment demonstrated that according to 27,8% of the interviewees between 40 and 60% of competitiveness is due to the innovations of the enterprises. The rest of the intervals received a lower percentage of affirmative answers – according to 24,6% of the interviewed between 20 and 40% of competitiveness results from innovations; 20,6% think that between 10 and 20% of it is determined by innovations; 15,1% of the respondents consider that between 60 and 80% are determined by the innovations and 11,9% point out that 80 – 100% of competitiveness depends on innovations.

We have applied the following analytical-evaluative indicators in order to statistically characterize the industrial sector and to reveal its state:
- Number and dynamics of industrial enterprises development in Bulgaria for the period under analysis;
- Distribution and dynamics of enterprise development according to the type of the economic activity;
- Distribution of the enterprises according to the economic activity and their size based on the people employed;
- Employment in the industrial sector in general and according to economic activities;
- Distribution of the sector enterprises in terms of regional location - regions to be planned;
- Financial – Economic Indicators: value of the fixed assets; operating expenses; operating income; output; turnover and added value – in general, according to the economic activities, according to the size of the enterprises.

These indicators provide an opportunity to characterize quantitatively the state of the industrial sector in a certain period of time and to establish the dynamics and trends in its development, and the financial indicators are essential for the characterization of the financial situation of the enterprises. The analyses of the financial-economic indicators, made generally for the industrial sector, based on the economic activities and according to the size of the enterprises, provide an opportunity to profile the industrial sector in all its aspects.
When the level of innovation activity of industrial enterprises is to be established, it is recommended to use official statistical information (e.g. from NSI) and to observe and define the values of the following indicators:

- Share of innovative enterprises out of the total number of enterprises in the industrial sector;
- Share of enterprises which have implemented new or improved products, innovative for the market out of the total number of enterprises;
- Share of the turnover, achieved by new or improved products, innovative to the market, out of the total turnover of the enterprises;
- Share of the turnover, achieved by new or improved products, innovative to the enterprise, but not to the market, out of the total turnover of the enterprises;
- Share of enterprises with cooperation in innovation out of the total number of the enterprises with technological innovations;
- Expenses for research and development activities in several sections (by type, sector, statistical region, financial sources, sector enterprises based on economic activities, enterprise size);
- Staff occupied with research and development activities in different sections (by category and gender, sector, statistical region, qualification degree, sector enterprises based on the economic activities, enterprise size, etc.).

In our survey, the analyses and assessment of innovation activity of the enterprises, studied by means of interviewing their managers and owners, are based on the issues defined in the research plan and the indicators emanating from them, as follows: Kalaydzhieva (2015).

- Existence of a strategy and plan for innovations and of an organizational system for innovation processes management;
- Existence of a relationship with other enterprises with a research profile and development of cooperative project solutions with other enterprises;
- Existence of highly qualified staff for the implementation of innovation activity;
- Implemented innovation projects;
- Type of the planned and implemented innovations;
- Number of the enterprises that make expenses related to the Research and Development Activity (R & D) and size of the expenses regarding the innovation activity;
- New products launched and integrated in the market;
- Analyses and assessment carried out in the enterprises regarding the innovation activity and assessment of the level of the innovation in the enterprise.
In order to examine the role of innovations in boosting competitiveness on the basis of statistical information, one can calculate the values of the following indicators revealing business trends in the industry and the level of competitiveness:

- Export expectations – this indicator is important to the analysis, because it shows the position of the enterprises and how their products are accepted on the international markets;
- Competitive domestic market position;
- Competitive EU market position;
- Competitive market position outside the EU.

Some other factors that are related to industrial enterprises competitiveness are:

- Demand on the domestic and international markets, competitive imports, finance and economic environment, etc.

In our opinion the survey should cover the following areas:

- Competitors, market share and competitive advantages;
- Existence of strategies and plans for raising competitiveness;
- Customer analysis;
- Acceptance by customers and success of the new products on the market;
- Assessment of the ability of the enterprise to adapt to the market changes;
- Export, assessment of consumers’ demand for the new products and their success on the market; assessment of the ability of the enterprise to adapt to the market changes;
- Assessment of the level of innovation;
- Assessment of the level of competitiveness;
- Assessment of the role of innovation in increasing competitiveness;
- Assessment of the financial results of the enterprises.

When the role of innovation and innovation activity in raising competitiveness is to be assessed, it should be taken into consideration that innovation activity and competitiveness are a synthetic indicator combining in itself a number of enterprise achievements. Innovativeness is included as one of the many elements (indexes) for assessing competitiveness and the global index of competitiveness. This is the reason why the following two models of the influence of the innovations on competitiveness can be offered. The first one includes all the indexes and their mutual influence. (Figure. 3. Model 1):
Fig. 3. Model 1. Studying the impact of innovation on the competitiveness of industrial enterprises

The second model is oriented towards the assessment of the impact of individual indicators of the enterprise’s innovation activity on the innovation activity.


Fig. 4. Model 2. Influence of the indicators for enterprise activity and the index „Innovation activity“

In order to analyse the situation of the industrial sector, the state of its innovative activity and the role of innovations in the increasing of competitiveness the following statistical methods can be used:

- Grouping statistical data;
- Tabular and graphical method necessary for the graphic presentation of the statistical series;
- Method of comparison for whose effective implementation comparability of the data is provided;
- Determining the relative shares and average levels, comparative analysis of the relative shares of the enterprises of different economic activities, periods of development and location by basic indicators;
- Statistical examination of development and establishing the level of changes and the speed of development by calculating the rates of the growth;
- Statistical examination of the location of the studied phenomena;
- Statistical examination of dependencies.

In order to establish the impact of innovativeness on the increase in competitiveness, the methods of regression and correlation analysis are applied. Scientific literature does not present any methodology for measuring the influence of innovation on competitiveness. Regression and correlation analysis are applied as methods, which enables us to study and measure the relations and dependencies of correlational type and to establish the presence of statistically significant and logical connection between the studied phenomena. For a more detailed account of the methods see Nikolova (2010), Karashtranova (2010), Nikolova, Madgerova, Kyurova (2007), Madgerova, Kyurova (2009).

The methods of analysis and synthesis can also be applied in order to establish the situation and the possibilities for further development of the enterprises, their innovation activity and its impact on competitiveness.

The system of indexes and methods for assessment we have proposed and adopted are the reason to suggest the following algorithm for determining the influence of innovativeness on competitiveness (see Figure. 5).
Defining the purposes of analysis

Selecting levels and sources of analysis

Collecting information

From a survey

Determining the system of indexes

Determining the grade of the system of indexes

Selecting criteria and methods for analysis

Assessing the influence of the innovations on competitiveness

From NSI

Selecting indicators for analysis

Selecting criteria for analysis

Assessing the development of the innovation activity of the industrial enterprises

Directions for increasing the competitiveness of the industrial enterprises based on the innovations

**Source:** Kalaydzhieva, V., Innovations and Competitiveness in the Industrial Sector (PhD thesis), 2015.

**Fig. 5. Flowchart of the algorithm for analyzing the influence of innovativeness on competitiveness**
The suggested algorithm examines very important stages of evaluation of the relations between innovations and competitiveness, which are presented in their logical sequence and with all the necessary activities that should be performed at every stage. We believe that this algorithm provides an opportunity for performing an objective and accurate analysis of the influence of innovativeness on competitiveness.

**Conclusion**

The methodology that has been offered will make it possible to assist the qualitative assessment of the innovation activity of the enterprises and their relation to competitiveness.

The proposed methodology and the conducted survey led to the following conclusions and recommendations for the development of innovation activity as a prerequisite for the boost of competitiveness:

1. Attracting new strategical foreign investors and new majority owners.
2. Increasing the share of small and medium-sized enterprises, which are to be technologically and productively connected and cooperated with larger companies in various ways of association, mostly cluster.
3. More intensive undertaking of high technology and scientific products.
4. Strengthening the role of the state in the development of sector strategies and defining priority sectors. It follows that what should be aimed at is the uniqueness of the newly developed products depending on the geographical and climatic peculiarities, as well as the traditions and the anticipated European and world tendencies and priorities.
5. Introducing rapid and essential changes in relation to the human resources and their management in a high-technology economy and the industrial sector, training of highly qualified employees who are fit for the new economy.
6. A necessity to create conditions for the development of the most important factor conditions for competitiveness, such as information technologies, science and technology as a whole, education, infrastructure and logistics.
7. Promoting the scientific research and development activity while tightly binding its results with practice. To do this, it is necessary to apply effectively the model of Triple Helix, which can provide a close interrelation of research, education and innovations, that is, putting in operation the Knowledge Triangle.
8. Adequate utilisation of European programmes funds, strengthening the role of the investment and innovation fund for attracting investors, creating a guarantee fund.
9. Deducting energy expenses and achieving a better energy effectiveness by implementing innovations in energy saving technologies.

10. Improving the export policy in the industry.

11. Providing an effective innovative management and creating the necessary innovation infrastructure.

The conclusions and recommendations listed above can be of use to managers when they need to make decisions regarding innovation activity and competitiveness of the industrial enterprises.

References


CURRENT RISKS IN CASH TRANSIT

Petiya BIOLCHEVA

Abstract
Encashment is important for providing cash to banks and their clients. The last five years have shown that the risks related to the bank and cash transportation are growing. The main threats are connected with a whole group of criminogenic factors and the presence of organized criminal groups. This study shows that in addition to the up-mentioned factors high frequency of incidents relates to both unintentional and intentional abuses committed by the collection personnel. All cash collecting companies operating in the country make daily efforts to reduce the incidence and severity of risk. Research objectives of the study are aimed at detecting risk spectrum threatening the processes of cash movement from customers to their banks and the negative economic effects of their implementation. An empirical survey is carried out among companies engaged in collection activity and banks which use their services to disclose risk profile.

Keywords:
encashment transport, risk, valuables.

Introduction

Commercial banks are the basis of economic life both for legal bodies as well as for individuals. Everyday life today is directly related to their work and to the aim of assurance the continuity in the core business processes that run in them. Encashment accompanies banking in terms of providing the banks with cash. It is also important in relation to transferring of valuable shipments (VSh) between customers and their bank. That makes it necessary the encashment being sufficiently reliable and secure, ensuring speed and quality of service. This article examines the main groups of risks that affect encashment activities and their frequency of occurrence in practice here in Bulgaria. The subject of the study are the encashment companies operating in Bulgaria. The subject is centered as to show what are the risks faced by service providers in transportation of valuables. The study aims to identify the main risk spectrum encashment and to analyze the economic effects of it. The topicality of the theme is dictated by the importance of the collection transport to provide the necessary money supply, both for banks and for its customers. The growth and

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occurrence of the group of criminogenic factors gives more and more negative impact on the transport of valuables. Despite the growing influx of “electronic money“ money supply „Cache“ remains central to the implementation of various payments. For these reasons we here are paying attention to the work encashment companies perform and the need of risk reduction in terms of frequency and severity.

1. Nature of encashment and major risks in it

In collection services there are three main parties on whose cooperation the security and quality of service depends. The first part, these are the managers at the encashment companies. Their main responsibility is to ensure safety and safe systems of work for their employees.

The second part are the employees, their responsibility to make rational decisions about their own health and safety and the safety of others affected by their acts or omissions; to cooperate with the employer and with his clients; to be alert and intensely careful when accepting / delivering valuables and their supporting documents; to use appliances, equipment or personal protective equipment in a manner that ensures protection; to report any irregularities; to protect the entrusted property.

The third party - these are the customers who are obliged to cooperate and assist in commission or acceptance of valuables; (Health and Safety Authority 2006) to be accurate and correct in the time period for using uneconomic services.

Encashment activity in this country is legally regulated primarily by two ordinances – „Regulation I-121 from 24.06.2004. the order and organization of security for transport of valuables and goods“ and „Regulation № I-171 from July 2, 2001 on the organization and control of the provision of security of banks and non-bank financial institutions“. There are clearly defined conditions of transport reception and transmission of valuables.

Encashment transport requires strict rules the breach of which gives rise to the appearance of the main groups of risk here. They can be defined into:

- **The routes** which a specialized encashment car must pass. Important characteristics of each route are outlined individually: dangerous sections of road, creating prerequisites for an attack; landslides and other hazards associated with the peculiarities of the road; radio shadowed places or zones uncovered by telematic operators and other risk areas. Here stand the questions of possibilities like extension of routes to be observed taking into account things like heavy traffic and multitude of entities that must be serviced.
• Employees of an encashment team must be equipped with a personal identification card, a badge and clothing, weapons, communication, safety vests, handcuffs, flashlights, gas masks and other supporting safety devices depending on specific conditions. The order of connection between the team and the monitoring center and rescue patrols of the company is strictly determined, as well as interaction with the Interior Ministry. (Regulation I-121)

An important procedure is provided for operation of the security team in cases of attack, accident, damage to cars and other extreme situations. Here among all threats from the group of the criminogenic factors threatening the conduct of the transport of VSh the risk exists posed by encashment team itself. On the one hand there stand the unintended personnel actions that can make a mistake inadvertently, possible oversight of the documents accompanying the VSh or problems with the safes themselves, which contain the money. Practice shows that this is mainly due to forgetfulness or multiple tasking and physical overworking of the team. On the other hand, there is the risk of purely intentional impacts of the team or members thereof on the integrity of shipments. In recent years, more and more often we can hear about such events.

• The next compliance with established rules refers to the reception/transmission of valuables and the related documents. When approaching the point of reception/transmission of VSh the collection team must get in connection with the security of the site, in order to ensure a safe and secure approach and readiness of employees to accept or deliver the consignment. Guards of the site provide safety zone, in which the loading and unloading of valuables and goods is accomplished. They keep a constant surveillance of persons present in the vicinity and on suspicion of endangering the safety of the work take measures and actions to protect personnel and valuables. Upon stopping the vehicle the first to come out is the security guards, then goes the person bearing the valuables. Upon completion of the loading and execution of the documents guards team close and lock the doors of the vehicle and continue driving on the route, reporting to the monitoring center on their departure.

The implementation of internal control is important for the quality of performance of the encashment activities. This includes two separate aspects of control as follows:

1. Operational controls which are aimed at improving operational efficiency and control of the activities of the organization.
2. Financial controls, which are designed to provide accurate and reliable financial reporting and protection of assets. (CASH COLLECTION AND CONTROLS MANUAL, 2012)

• An important place in the implementation of reliable encashment is reserved for specialized armored vehicles. Typical of that is there must be:

1. separate areas: for the driver, the guards and liable and safekeeping persons as well as for the safe itself (cargo space) with a degree of resistance determined by the BNS; the doors at the zone for the driver, guards and safekeeping persons are equipped with additional locking devices to prevent opening from the outside; the vehicle must be equipped with special openings for shooting;

2. the areas for the driver, guards, persons responsible for the safekeeping, the engine, the air conditioning system, fuel tank and battery are bulletproof; materials used are bulletproof, bulletproof glass should not emit debris; the tires of the armored car are fitted with a system to run at least 30 kilometers after shooting; the vehicle is required to have a reliable security system that allows continuous control and monitoring by the monitoring center. (Regulation I-171)

Risks related with vehicles are mainly due to the emergence of technical failure or collapse of some of the security systems. This in turn may provoke a number of risk conditions during the period of finding a suitable parking space (where possible) and the awaiting of the security patrol in charge, the arrival of a new team or the overloading the VSh in an unprotected area.

All these rules are spelled out in the mentioned regulations. This raises the question of their application in practice. Both ordinances are already losing relevance and a number of requirements are inapplicable at present. This is due to the fact that they were written more than 10 years ago and since then no adequate updating has been done. Here stands the lack of clear rules regarding the servicing of ATMs, which are now widespread and require weekly service. Next we may put the number of team members. In the regulations mentioned teams should consist of at least four employees – a driver, security guards and two accountable persons. Today encashment transport is an activity that takes place daily and is associated with maintenance of multiple objects with smaller amounts of valuable shipments. This does not require such a number of team members. Practice shows that most of encashment companies operate in the presence of two staff members just it is questionable whether they are sufficient. Next disadvantage of the regulations in question is the mismatch of the minimum amount of the monetary value of the items
that require transportation by specialized armored vehicle - one recorded the sum to be over BGN 20 000 while the other says it must be over BGN 30 000. There are a number of inconsistencies that require taking measures on updating and revision of the legal framework.

It is essential an **adequate management of risk** to be done for all the encashment process. It includes identification of hazards; assessment of the risks that could lead to danger; decisions on controlling measures to prevent or minimize risks; implementation of control measures; monitoring and review on the effectiveness of the control measures.(Cash in Transit Code of Practice)

Identification of risk threats includes all hazards associated with the architecture of the building, which should be handled by encashment teams - safe parking, secure entrance to landing stage, sufficient lighting, video surveillance; routes to each object of service and the ways of movement there in, security and reliability of personnel and vehicles, criminological situation and many others.

Risk assessment is a combination of the probability of occurrence of an adverse event and the severity of the outcome, which would cause this event. The employer is responsible for drawing up a risk assessment related to the activities of providing encashment. The risk assessment must be prepared for all possible situations at the workplace, and employees must be informed and instructed to concrete actions so as to ensure their safety and health.

In working out the risk assessment certain elements should be taken into account such as the place of work, concrete tasks, communication systems, including places in a radio shadow (or out of range of the telematic operators), the hour period of the day, the use of personal protective equipment, environmental factors such as heat/cold, traffic and pedestrian flows, etc.. (Health and Safety Authority, 2006)

Control measures for prevention and minimization of risks are associated with the implementation of actions and mechanisms preventing the identified and well known threads. This requires considerable efforts and resources of tangible and intangible kind that are able to significantly reduce the risk events.

The last phase of risk management involves continuous monitoring of risk and reviewing the effectiveness of the control measures.

### 2. Methodology of research

In order to establish the actual risks at encashment, a survey and partially in-depth interviews are made in five of the ten biggest security firms in the country offering this service which makes the overall representativity of the sample relevant.
The sample includes the following companies: VIP Security, ASP, JSIS, COT ООД, Сияна 2000 which serve the needs of the First investment bank.

The survey also affects respondents that use the services of the indicated encashment companies namely 30% of the banking sector (BNB, Raiffeisenbank Bulgaria; Eurobank; Piraeus Bank; First Investment Bank; Central Cooperative Bank, etc) which have been licenced to operate in the country.

The survey defines the two types of respondents that complete the information about the wide variety of risks concerning reception/transmission of VSh their transportation and storage.

Twenty-five questions are defined in the survey related to the core elements accompanying the implementation of the encashment service, namely the clients, the encashment staff, the terms and conditions of reception/transmission of VSh and the vehicles. The questions in the questionnaire are with open answers, allowing respondents to express their views as well as their opinion about the situation of the encashment activity. The objective is to define the main problems which occurred and hence, determine the present risks, forms and frequency of their occurrence.

Partially in-depth interviews were conducted at meetings with relevant respondents who along with completing the survey questions have shared their expert views and opinions on the topics of study.

The time of conducting the empirical study is the first quarter of 2016. The period studied comprises five years. Different statistical methods are used and means of processing the questionnaires and interviews such as average value, aggregation, invoice analysis, percentage of allotment.

The empirical study aims the obtaining of reliable information for the research, on the basis of which the required analysis, conclusions and summaries can be outlined. This could serve as a prerequisite for determining the core groups of present risks in encashment. Keeping in mind the delicate nature of questions and confidentiality of information the data is presented in the sample in a summarized way.

3. Results of the survey

Encashment companies in the country work on contractual relations with commercial banks and their clients. Some of them are specifically designed to meet the needs of a particular bank. Thus the process of money movement is closed within the bank and there is more control over it. In contrast, the majority of the banks outsource this service to one or more encashment companies. In case of contracts with more than one encashment company, the different services are provided by
different companies, for example the charging cash machines (ATM) is held by one company, servicing corporate clients is held by another company, servicing certain bank customers is held by a third company, etc. The study shows that the average number of banks with which an encashment company operates is about 8. One of the encashment leaders on the Bulgarian market works with 20 of the 28 licensed commercial banks in the country.

In the recent years, there is also a growth in the number of sites that are encashed. The average number of the collection sites encashed by a company is more than 1800. For large companies this number is beyond 5000, including bank offices, commercial premises, gas stations, grocery chains, pharmacies etc. To implement their activity encashment companies rely on specialized teams, ranging from 50 to 230 in number. Teams are located in different regions of the country, depending on the need of the collection customers. All companies cover the needs of their customers carrying out transport of valuables throughout the country.

30% of security managers of commercial banks think that encashment transport is not reliable enough. Only 14% of banks define it as definitely reliable. This answer is given mainly by banks that carry out their own encashment transport. Managers of the encashment companies think differently. According to them the encashment transport of larger companies in the market is sufficiently reliable, which they actually work daily for.

Along with increasing of the activity and number of clients, all respondents report that over the past five years the risk of robberies on the collection of pay-vehicles has increased. In about 70% of encashment companies over the past five years there have been attempts robbery of VSh during transfer or transport. Compared with the previous 5-year period, this risk is increased by 38%.

The study also identifies the riskiest moments in the performance of collection activity, namely:
- Transfer of valuables from the site of collection to the car;
- The moment of loading and unloading of valuables;
- The transport of valuables in areas without mobile phone coverage;
- Encashment in the late hours.

In the case of any incident related to the loss of monetary value, while valuables of banks and their customers are transported, the loss is covered by the encashment company. Despite that the risk is transferred on the company carrying the encashment, the reputation risk for the bank remains. Over the past five years in the transport of valuables, 15% of banks have suffered from a robbery. 25% of managers of the collection companies admit that their teams were victims of assault and
robbery. The financial loss of the encashment company is covered by insurance, but here is also reputational damage to the company, which leaves a strong footprint for its future activities.

Another important factor for the quality of service is the correctness of the customers of the collection companies. Their attitude, precision and strict fulfillment of the requirements for receiving/transmitting valuables are important. Most of encashment managers believe that their customers have already "learned" the rules and are correct. However, among them there are those who have not prepared their valuable consignment and who slow up the team. Another problem that is reported is that some places lack separate protected areas for reception/transmission of valuables, and this indicates an increased level of risk.

Encashment activity is highly risky because of the transfer of valuables with large monetary value. Almost 90% of encashment managers see danger for the life and health of their staff, both at reception/transmission of valuables and in transportation. Logically, there arises the question of reliability and qualification of employees performing encashment. While some of the large companies say their staff is qualified enough, other 40% identify gaps, sharing that there is more to be desired. Lack of sufficient qualification is outlined by the staff turnover that can be registered on the one hand, and by the unrealistically low payment on the other hand. There could be seen unfair competition in the branch and the emergence of insufficiently specialized and qualified companies who offer lower prices to customers for the service. At the same time in response to the market situation, encashment companies down the price, but it reflects on the quality of service and staff training. There is compulsory training of personnel performing encashment when they start job and all surveyed companies conduct such. Besides the compulsory training, about 85% hold regular training sessions on specific driving, actions in crisis situations, shooting training, providing first aid, applied martial arts etc.

Practices shows that with the accumulation of experience employees performing collection of valuables, indulge in more violations and attempts to circumvent or breach of security regulations. There are many cases where employees have made attempts to misappropriate transferred valuables. This happens most often when they can see customer’s omissions in sealing the „Deba safe“, where valuables are transmitted; when they intact the integrity of ATM cassettes for cash machines etc. Over the past five years about 25% of the studied encashment companies have dealt with similar problems.

There is a lack of rigor in the implementation of procedures for transport, reception/transmission of valuables according to the requirements of Regulation I-121
on the order and organization of security in the transport of valuables and goods. A frequent violation is not to meet the requirement on the number of team members, transferring of valuables between individual cars in unprotected areas, etc.

In an attempt to reduce this kind of misappropriation, fiduciary relationship with the staff is implemented in more than 80% of encashment companies. According to the opinion of management, the close relationship and the interest of supervisors on the encashment staff reduce the risk of violation. This is due to the fact that the staff sees support and respect in their leaders, and this leads to their correct behaviour. Other mechanisms that are used to reduce the risk of intentional violations by encashment employees, are regular tests of loyalty and reliability as well as consulting psychologists. With the same purpose their managers hold regular meetings, and larger companies hold also team buildings.

The respondents' views on the adequacy and timeliness of actions of the encashment staff is illustrated in Figure 1. Here their need for better training and qualification can be seen.

![Figure 1](image_url)

**Fig. 1. Level of preparation for reaction of the encashment teams against threats**

Another essential factor for the performance of encashment are the vehicles. All managers define their encashment resources as sufficiently reliable and assert that they meet all regulations for armor and security systems. The number of vehicles varies from 50 to 250 in the different companies from the survey. Some of them purchase armored vehicles second hand mainly from Germany, and then make a
complete replacement of chassis and engine when necessary. Another part of the companies afford buying new cars, and then assign their armor to a specialized company. All the encashment companies plan purchase of automobiles annually. One of the main characteristics of the specialized encashment automobile is their security system. All cars are equipped with special GPS systems connected with a monitoring center; panic buttons; interlock system on the doors; system for stopping the engine; GSM location; video surveillance and other measures that are subject to trade secret. Despite the good technical equipment, there is always something better and more advanced. In response to the question „Do you find it necessary to introduce a new type of technical security systems in vehicles?“, managers of the encashment companies have different opinions. 25% do not have such needs, other 30% would introduce such if they find something suitable for them according to their budget. The remaining 45% are determined to introduce innovations in technical security systems. Over the past five years none of the companies have suffered from serious breakdown in a system supporting the implementation of encashment activities that had disturb core business processes. Their problems are mainly related to software or a technical problem with the vehicle.

The study outlines the main problems at encashment, namely:

- A high level of risk caused by unrealistically low prices for the encashment services. This leads to a reduction in the level and quality of service.
- A high level of risk caused by the large supply of the service by incompetent companies. Thus the risk of robbery increases.
- A high level of risk caused by companies managing too big corporate contracts using personal networking or unfair competition. This reflects on the workload of encashment staff and increases the risk of errors.
- Risks caused by the lack of topicality in the legislation. The volume and precision of the existing legislation are insufficient, making it outdated. Laws on private security activity (ZChOD. Obn. DV.br.15,2004) and regulations are not preserved in the best way in practice, and this leads to a decline in quality and unfair competition. More rigorous requirements on who can perform such activities are needed.
- One of the main problems is that the country has no large investments, which leads to the shrinking of banks and commercial sites.
- Encashment companies tend to have a larger number of customers at the expense of smaller value valuables. This leads to a high risk by a wide range of criminogenic threats and also by the increasing of the encashment teams’ routes.
• „Electronic money“ become more and more common. In the long run they will be a mass form of payment, and this will affect the need for mass encashment services. This will reduce the number of valuable shipments and the need for related services.
• The risk posed by a group of criminogenic factors is growing. There is an increased risk of armed attacks by organized criminal groups, including the possibility of specialized international criminal groups who carry out an attack and then quickly leave the country.

Economic impact of the implementation of the identified risks

To illustrate the economic impact of the manifestation of the risks in the process of service of valuable items are described potential losses due to potential robbery on encashment car.

• Loss of cash related to VSh, which the company must reimburse its customers. The money usually are insured, but the time for recovery is relatively long, and insurers, if a breach by the team is proved, would not recover the loss, ie it must be covered by the encashment company, ie expenses for reimbursement to customers.
• Damage vehicle - here are a necessary cost of its restoration and repair; costs of providing another vehicle for the duration of the repair.
• Applied physical and psychological damage on encashment personal – remediation costs, costs of new staff training.
• Loss of customers - lost profits from the victim client and other clients.
• Loss of reputation - lost profits from loss of customer confidence in the company encashment from there outflow of clients and loss of financial assets; loss of future customers there and serious financial damage; loss of key personnel due to poor company reputation; costs of hiring and training new staff.
• Violation of the market positions of the company – Loss on financial stability; Bankruptcy.

Labor perspectives in front of the encashment companies are focused on:
• Reducing the risk spectrum through the introduction of better logistics in terms of tracking valuables by customers and faster authentication of their accounts. The way of client’s money from the moment of their reception to the collector is a transport to assembly point (if the client is in a smaller settlement) where consolidation of valuables and transport to cash center is held and where valuables are
counted and then the customer's account is authenticated. At the moment of authentication the client is able to see the money encashed in the bank account. Typically, the time it takes is about 2-3 days. During this period the customers can not operate with their resources. The risks to the integrity of valuables and their security when passing through the individual stations exist. The prospects here are directed to immediate authentication of the customers' accounts, which will give them an automatic access to their money. This would reduce the risk of erroneous reporting information and of other possible violations.

- Improving the service quality of cash machines. Transactions at cash machines are so far monitored by the bank, owner of the device. At the cash depletion the bank declares the need for charging ATMs to the respective cash center that prepares ATM cassettes and the encashment team loads them. The problem here is the possibility to disrupt customers’ services if there is no cash in the period until the device is charged. The perspective in front of encashment companies is related to conducting their own control of device availability and to logistical planning of the exact moment to charge ATMs.

- Limiting the number of companies that offer this kind of service at the expense of increasing the quality of service and the qualification of encashment personnel. Introducing more reliable means of technical control and security in the transport.

### 4. Recommendations for prevention of risks in encashment

As outlined above, the risk groups concerning the implementation of encashment are broad. However, a timely prevention could take place to reduce significantly the loss of finances and clients on the behalf of the encashment companies.

Managers of encashment companies should take the following measures at risk prevention:

- To carry out an analysis of the environment
- To determine the range of customers they want to target and to work on improving the quality of service, in order to satisfy their specific needs. Thus they could specialize and would ensure loyal customers. They should also hold meetings with clients on increasing the level of security in implementation of the bilateral process of reception/transmission of valuables (WORKSAFE VICTORIA, 2005).
To reduce the risk spectrum through motivation and training of encashment staff. To work on increasing motivation and qualifications of the encashment teams through various methods and means. In order to be adequate of the daily threats, encashment teams should be physically and mentally stable and sustainable.

**Conclusion**

Encashment is a highly risky activity, a subject to a wide range of risks. The main threats to its implementation lie in the group of criminogenic factors. Along with them, this article shows that members of the collection teams are also a risk group. In the greatest extent their mistakes are unintentional, related to technical errors, provoked by the large number of sites and a large workload. Despite the wide spectrum of risk, this study shows that the encashment activity in our country offers a good level of reliability and a sufficient number of competitors that offer it. Managers of encashment companies work daily on improving security of the service “reception/transmission” and transport of valuables. They carry out the necessary technical and organizational innovations in order to reduce the risk and to offer reliable and high quality service.

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ASPECTS OF UPDATING THE EUROPEAN PACKAGE TRAVEL DIRECTIVE AND THEIR IMPACT ON TOURISM COMPLAINTS

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JEL K23, L83

Abstract

Changes in the way the tourism companies do business create tension when trying to follow the current out-of-date legal framework for tourism complaints. In order to reflect the changes in business environment and consumer behaviour the European Commission approves a new Package Travel Directive. The current article analyzes and summarizes the newly approved changes in the legal framework of the package travel. Comments on their impact on the sellers' business and consumer protection in regard to the complaint-handling process have been made. The conclusions about the expected improvements in the considered aspects are as follows:

- the unification of the rules on information, liability and mutual recognition of national protection schemes against insolvency will create equality between different sellers;
- the number of consumers who will be able to make complaints about the tourist services being used will increase;
- improvement of the awareness of consumers in regard to liability in case of failure or improper performance of the concluded travel contract;
- better consumer rights in case of cancellation or seller's insolvency;
- better indemnity in case of complaints raised.

Keywords: European Package Travel Directive; update; impact on tourism business; consumer protection; complaints.

Introduction

Contemporary tourism is a business of great international importance. International travel arrivals reached nearly 1,2 billion in 2015, which makes it the sixth consecutive year with more than 4% increase in international arrivals (World Tourism Organisation, 2016). At the same time, there are some negatives in regard to both the business and the consumer-tourist. In order to match optimally the interests of sellers of tourist services and their consumers, different international organisations, including the European Union, work on creating adequate mechanisms. Such is the mechanism for complaint management in tourism. The better the mechanism is, the easier tourists...
can be retained with minimum efforts by the business. From this point of view, the research object in the current article is the Council Directive (EU) 2015/2302\(^1\). The knowledge of the Directive and the forthcoming changes is important for the Bulgarian tourism theory and practice due to its mandatory enforcement in case of package travel within the European Union. The clarification of the changes should lead to improvement in the complaint – handling system in the Bulgarian tourism practice. The research is based both on basic European legal documents and scarce researches in the area of complaint management made by Marinov (2004) and by Rakadjiska, Marinov and Dyankov (2013).

In this context, the main research goal of the article is to analyse the newly- approved changes in the legal framework of package travel and to comment on how these would impact on organisers' and sellers' business and on consumer protection. The analysis and comments that have been made should help the specialists and all participants in handling tourist complaints against Bulgarian companies.

In contemporary world the number of people who take advantage of travel and tourism is constantly increasing. This increase is due to two major evolutions – the huge expansion of low cost airlines and Internet. These two factors allow more people to travel cheaply to more destinations than ever before.

Internet and low cost airlines have altered business models and consumer behaviour. The increasing use of Internet for search and travel bookings leads to an increase in the number of consumers who make their own travel packages\(^2\), mostly online. Travel search engines give an opportunity to the potential tourist to explore and choose the best offer at the best price. Apart from that, it is common for consumers to book flights, accommodation and other tourist services separately from different traders – the so called „dynamic packages“\(^3\). We can surely say that the trend towards tailor- made travel will accelerate at the expense of package travel in the future. One of the main reasons for this trend is that the conventional tour operators, again thanks to Internet, can sell travel arrangements that do not amount to travel packages. They are urged to do this because of the liability and the costs that are associated with the legal regime of the package travel.

Changes in the way the tourism companies do business create tension when trying to follow the current out- of- date legal framework which is generally based on the Council Directive 90/314/EEC\(^4\).

This Directive has successfully protected consumers who booked package travel arrangements for the last 25 years. "Council Directive 90/314/EEC regulated the main rights of consumers of package travel in terms of the requirements for the information provided, the liability of sellers for the poor performance of the travel package and
the protection against insolvency of organiser or retailer. An update of the regulatory was necessary in order to respond better to the consumer needs on one hand, and to the travel business on the other, in order to eliminate confusion and to fill the gaps in the legislation. Many of the new combinations of travel services fall definitely out of the scope of Council Directive 90/314/EEC.

In order to reflect the changes in the business environment and consumer behaviour the European Commission decided to update this Directive. As a result of numerous studies and consultations among Member States, consumer organisations and tourism business leaders, on 25 November 2015 Directive (EU) 2015/2302 was adopted. It aims at enlarging the coverage of protection as a result of the changes that occurred, improving the transparency and increasing the legal security both for travellers and traders.


The first area which has been reviewed and updated in accordance with the changes in market and consumer behaviour affects the scope of the Package Travel Directive. The Directive used to protect European consumers who had purchased so called „travel packages“. Considering the changes in market the concept of travel package needed to be expanded. This has been done by introducing the new criteria referring to the way of sale and purchase of travel services, and thanks to which the consumers are entitled to adequate protection.

Taking into account the progress in information technologies and the increasing interest in customized travel, travel services which are put together upon consumer's request have been added to the new Directive as well. Such is the case when travel services which are going to be used within a holiday are combined as per client's requirements and preferences in a certain selling place before the final payment has been made. Irrespective of the fact whether such a combination of services has been done in a travel agency office or online it will be considered as a travel package.

As the name suggests, the new Directive will be applied both for travel packages and linked travel arrangements offered for sale to travellers by organisers, intermediaries and retailers. Council Directive (EU) 2015/2302 expands the protection of all consumers purchasing tourist services which are going to be used within a certain holiday. This can be done through:

• traditional packages including at least two elements of travel services (transport, accommodation and another service, e.g. car hire) and being put together by one organiser at his choice;
• customized packages – the traveler himself chooses the components of the tourist services himself and then he buys them from the same business agent online or offline;

• linked travel arrangements – these are packages put together by the means of Internet pages linked through partner agreements. The travel services are purchased from different sellers by click-through online booking processes where the consumer's data are transferred from one business agent to another and the contract with the second agent is been concluded within 24 hours after the booking confirmation of the first service. An example of linked travel arrangements is the case when a passenger books a flight online and subsequently he is invited to choose accommodation by a partner web page and he makes the second booking within the above mentioned time frame.

On the other hand, Council Directive (EU) 2015/2302 excludes from the definition of „travel package“:

• „packages and linked travel arrangements covering a period of less than 24 hours unless overnight accommodation is included“;

• „packages offered, and linked travel arrangements facilitated, occasionally and on a non-for-profit basis and only to a limited group of travellers“;

• „packages and linked travel arrangements purchased on the basis of a general agreement for the arrangement of business travel between a trader and another individual or legal entity who is acting for purposes relating to his trade, business, craft or profession“.

Before signing a contract the organisers, intermediaries and retailers should get every traveller familiar with the fact that he is purchasing a travel package and the rights he is entitled to as per new regulations.

Another area of the Directive which is updated is related to the provision of information and the content of the package travel contract. It settles what kind of information has been given to consumers, when and in which format. Council Directive 90/314/EEC defines strict requirements concerning the information about package travel which has been published in a brochure. This provision has been criticized due to its focus on the brochure whilst there is a wide range of marketing tools which become more popular in the tourism business. According to Directive (EU) 2015/2302 „key information, for example on the main characteristics of the travel services or the prices, provided in advertisements, on the organiser's website or in brochures as part of the pre-contractual information, should be binding, unless the organiser reserves the right to make changes to those elements and unless such
changes are clearly, comprehensibly and prominently communicated to the traveller before the conclusion of the package travel contract. The new technologies help for dropping out the strict requirements about brochures whilst facilitating an easy update of the pre-contractual information at the same time.

A lot of responsibilities and obligations of the organisers, intermediaries and retailers are being stated in Council Directive 90/314/EEC but there is no explicit specification which is the liable party. According to the text „the organiser and/or retailer party to the contract is liable to the consumer for the proper performance of the obligations arising from the contract... With regard to the damage resulting for the consumer from the failure to perform or the improper performance of the contract, Member States shall take the necessary steps to ensure that the organiser and/or retailer is/are liable...“. The right of the Member States to decide who in fact is liable for the performance of the tourist services eventually blurs the limits of liability and creates confusion and insecurity in consumers.

Article 13 of Council Directive (EU) 2015/2302 regulates that „the organiser is responsible for the performance of the travel services included in the package travel contract, irrespective of whether those services are to be performed by the organiser or by the other service providers“. Apart from that, Member States keep their right to hold liable the retailer for the performance of travel package as well. As before, the traveller is obliged to inform the organiser as soon as he finds out any gap in the performance of a tourist service which is included in the travel contract. The organiser in his turn is obliged to provide a prompt assistance to a client in difficulty. According to Council Directive (EU) 2015/2302 the information about the reforms should be provided either in the package travel contract or in the confirmation of the contract, namely that „the organiser is:

- responsible for the proper performance of all travel services included in the contract...;
- obliged to provide assistance if the traveller is in difficulty...“.

Other mandatory information as per Council Directive (EU) 2015/2302 which needs to be included in the contract is:

- contact information about „the organiser' s local representative, of a contact point or of another service which enables the traveller to contact the organiser quickly and communicate with him efficiently, to request assistance when the traveller is in difficulty or to complain about any lack of conformity perceived during the performance of the package“;
"information that the traveller is required to communicate any lack of conformity which he perceives during the performance of the package..."

The third area, which has been discussed and updated, affects changes in the package travel contract. Council Directive 90/314/EEC allows consumers to cancel the contract without any cancellation fee before departure if the organiser changes significantly any of the main contract terms. These same significant changes in the main terms are not precisely defined in the Directive (except for the price). In Council Directive (EU) 2015/2302 the rules for price review have been changed. Thus the traveller may cancel without paying a cancellation fee if the organiser exceeds the allowable increase limit of 8% of the total price of the package.

According to Council Directive (EU) 2015/2302 the consumer will have "the right to terminate the package travel contract before the start of the package without paying any termination fee in the event of unavoidable and extraordinary circumstances occurring at the place of destination or its immediate vicinity and significantly affecting the performance of the package, or which significantly affect the carriage of passengers to the destination". Such circumstances can be natural disasters, civil unrest, terrorist attacks etc. When terminating the package travel contract due to force majeure circumstances the traveller is entitled to a full refund but he does not have the right to claim for additional compensation.

In the new Directive special attention is paid to the compensation for sustained damages. The changes guarantee that the traveller is entitled to a discount for the period characterized with lack of conformity, as well as compensation paid by the organiser for all the damages sustained, including non-material, as long as they are not the traveller's fault, a third party's fault or due to extraordinary circumstances. A minimum limitation period for making legal claims in regard to damages sustained is defined to two years.

The last area which has been changed is related to the protection against organiser's, intermediaries' and retailers' insolvency. Council Directive 90/314/EEC requires from the organiser and/or retailer party to the contract to provide "sufficient evidence of security for the refund of money paid over and for the repatriation of the consumer in the event of insolvency". Apart from warranty for the refund of money and for the repatriation of travellers in the event of bankruptcy, there is an option for continuation of the package in the new texts. According to Council Directive (EU) 2015/2302, "organisers not established in a Member State who sell or offer for sale packages in a Member State, or who by any means direct such activities to a Member State, shall be obliged to provide the security in accordance with the law of that Member State". There is an intention to develop an improved system of mutual coop-
eration in the event of insolvency. This system includes central contact points that will exchange information between each other about the specific requirements for insolvency protection on a national level.

Implications of the changes for the operators, intermediaries and retailers

The update of the Council Directive 90/314/EEC should be done in a fair and balanced way both for the tourism professionals and the consumers.

There are some expectations that these new arrangements will increase the level of costs for the Bulgarian tour operators and intermediaries who operate within the European Union. As a result of the changes a business agent who sells so-called „dynamic packages“ will have to bear the financial burden in guaranteeing every component of the holiday. However, in some of the areas the costs may be reduced as a result of the new Directive. The update of requirements about pre-contractual information means that the provision of all the necessary information will no longer be based exclusively on travel brochures, and that organisers will not have to reprint brochures anymore in case of change in information.

From a business point of view, the enforcement of equal rules concerning information, liability and mutual recognition of national insolvency protection schemes reduces the obstacles to cross-border business for tourism organisers, intermediaries and retailers who wish to operate within the European Union. The updated Directive creates equality between different operators selling competitive tourism products. It encourages competition between old and new market players and makes the market more transparent, especially with regard to online sales.

There are some worries that the new regulations are „too open“ for interpretation and as a result of it organisers and retailers might be threatened by an increase in cancellations.

It is planned for Council Directive (EU) 2015/2302 to be implemented on 1 July 2018 but tourism organisers and intermediaries should start preparing for coordination with their new obligations straight away. This is necessary because of the trend holidays to be planned and booked considerably earlier. According to Arrowsmith (2016) preparation for organisers, intermediaries and retailers should include:

- update of the overall company strategy with the guidelines of the new European Directive;
- review of pre-contractual information which is provided to travellers by tourism organisers and intermediaries in order to make sure that all the necessary information is available;
review of internal procedures concerning cancellations and termination of contracts and provision of the relevant information to the travellers;
• consultancy about an adequate insurance policy covering new risks.


The changes in the scope of the Directive, i.e. the increase in the type of travel arrangements which organisers, intermediaries and retailers will become liable for, lead to an increase in the number of holidays which fall into the scope of the Directive. The current protection has been expanded with the inclusion of customized packages and other linked travel arrangements, now online bookings of packages being added. As a result, the number of Bulgarian consumers who will be able to make a complaint in case of discrepancy in the performance of contract has increased.

The new requirements clearly specify who is liable for providing information to the traveller once the contract has been concluded. Consumers will be aware that the organisers are liable for the proper performance of the inclusive services now. Apart from the performance of contract the organiser will be generally liable for the compensation of all the damages, including non-material, which are caused by the lack of conformity.

Thus consumers will know whom to inform in case they notice any gaps in the performance of contract, as well as whom to address if assistance is needed. The introduction of a single contact point in case something goes wrong will facilitate direct addressing of complaints and potential claims.

Directive (EU) 2015/2302 guarantees better indemnity for travellers. In addition to a price discount in case that the tourist service is not performed as appropriate, consumers will also be able to claim for compensation for all the "non-material" damages sustained, especially in case of a spoilt holiday.

The new European Directive offers better cancellation rights. Consumers will enjoy improved flexibility now as they will be able to terminate the contract before the start of the travel package by paying the relevant compensation to the organiser. They will also be able to cancel the contract without any penalty fees before departure in case of force majeure circumstances. By introducing a limit of 8% on the additional price surcharges more predictable prices are guaranteed and respectively financial peace of mind to travellers.

The changes increase the level of protection for consumers in the event of organisers', intermediaries' and retailers' insolvency. In addition to a warranty for a full refund and covering the cost for repatriation, consumers will also be offered an option
to finish their holiday. The mutual recognition of insolvency protection between Member States strengthens the sense of security not only in the sellers but also in the consumers of package travel.

**An improved system for handling complaints and indemnities**

The updated European Directive offers an improved system for handling complaints and indemnities effectively. Consumers who put together travel packages assisted by sellers or by themselves over the web can already rely on protection of their rights. According to the new requirements pre-contractual information about the travel (brochure and now seller's web page) should clearly provide contact information such as address, telephone number, e-mail etc., which can be used by the consumer in order to register a complaint. Such a requirement about information facilitates access to sellers and improves the effectiveness of communication with them in case a problem with the performance of contract arises. It is guaranteed that the traveller has an option to make complaints related to the performance of contract directly to the retailer who sold the package. It is the retailer's responsibility to forward these complaints to the organiser straight away. Information about the internal company procedures for registering claims and about the so-called alternative mechanism for dispute resolution (ADR)\(^7\), as well as the platform for online dispute resolution (ODR)\(^8\) if applicable has been added as obligatory in the package travel contract. The platform for online dispute resolution is already accessible to Bulgarian consumers.

Travellers will be entitled to compensation by the organiser for all the damages, including non-material that are sustained as a result of the lack of conformity to the contract. Such an example is compensation for a spoilt holiday due to substantial gaps in the performance of tourist services. They will be able to make legal claims in regard to sustained damages within at least 2 years.

**Conclusion**

Until recently the rights of consumers of package travel used to differ greatly depending on the travel arrangements which they had chosen - traditional or “dynamic” packages, linked travel arrangements etc. Different regulations were enforced, with different rules and complaint-handling procedures. Consumers who wanted to make a complaint when things went wrong with the tourist services often fell in a maze while trying to address the right party. This situation made travellers feel deprived of adequate legal protection.
The update of Council Directive 90/314/EEC provides a balanced range of rights for travellers by supporting the new forms of package travel. Millions of consumers, especially those who make online bookings, will further be protected by the Directive. The reform complies with the challenges of the Internet era. It increases security of consumers by improving transparency and strengthening the protection in case something goes wrong. If travellers feel more secure then the number of holidays will continue to increase, and respectively the tourism business.

End Notes


3 „Dynamic packages“ allow travellers to combine tourist services such as flights, accommodation etc. on their own instead of purchasing a ready-made travel package.


5 The most extensive public consultation started on 26 November 2009 and lasted until 7 February 2010. 161 representatives of different stakeholders took part in it. The consultation was launched with the assistance of Member State authorities, tourism associations, consumer organisations and consumers. Five separate questionnaires were published, with some common questions targeted at all the stakeholders and some other questions targeted at each specific stakeholder group. For the tourism associations there were respondents representing different tour operators and travel agents (including online travel agencies), airlines (including low-cost ones), hotels, restaurants and cruise agents. For the Member States authorities there were respondents from different ministries and agencies responsible for the enforcement of Council Directive 90/314/EEC. From the Bulgarian side the Ministry of Economy, Energy and Tourism took part in the consultation.

6 According to Council Directive (EU) 2015/2302 „traveller“ means „any person who is seeking to conclude a contract, or is entitled to travel on the basis of a contract concluded, within the scope of this Directive“.

7 Alternative dispute resolution (ADR) is a unifying term which is being used to describe different methods or combination of methods for out-of-court dispute resolution such as arbitration, mediation, conciliation proceedings etc.
The platform for online dispute resolution (ODR) is a single portal for access which allows consumers and traders within the European Union to settle their disputes in respect to both national and cross-border online purchases. This will be accomplished by the means of directing the disputes to the national authorities for alternative dispute resolution (ADR) that are connected to the platform. These authorities have been chosen by Member States based on quality criteria and the Commission has been informed about it.

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CUSTOMER EQUITY MANAGEMENT OF INDUSTRIAL ORGANIZATIONS IN BULGARIA

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Topicality and significance of the concept of customer equity

Globalization of world markets and growing competition between business organizations pose complex challenges in front of contemporary management. Some of them are related to the ability of business organizations to keep their current clients and attract new ones. These matters are a subject of customer-oriented marketing concepts of growing popularity. The concept of customer equity is of growing research interest as it represents the significant influence of the client base and the formation of long-term relationship it entails in acquiring and maintaining sustainable competitive advantages for businesses. The establishment and maintenance of such relationships are developed by the concept of customer equity which may be viewed as an innovative approach to keeping and attracting clients and managing the value of these relations. This in turn leads to the success and growing influence of these business organizations on the market and the rise in their market value. In addition, the importance of customer equity for establishing the market value of businesses is emphasized as its magnitude is a part of business organizations’ value beyond their assets worth. As described so far, customer equity plays a key role in the successful development of businesses, but it also poses questions related to its growth and management.

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Research on customer equity is mainly available in the field of services, which directs further attention to researching customer equity of industrial organizations. Therefore, the possibilities for management of customer equity in the Production of Yoghurt and Dairy goods and, more specifically, for yoghurt producers in the Republic of Bulgaria have been studied and researched. The choice of the product category is based on the traditional nature of the product, its popularity outside the country and its well-developed market.

Object and subject of the Thesis

In accordance with the high interest in studying the possibilities for customer equity management within the framework of industrial organizations, the object of this research is yoghurt market in Bulgaria.

The subject of the research is customer equity of yoghurt producers in Bulgaria and the drivers that influence its formation and transformation.

Research thesis, aim and tasks of the Thesis

The thesis presented is that industrial organizations can manage their customer equity by purposefully influencing customer behavior through key marketing determinants.

The aim of the dissertation is to identify the key factors influencing customer equity of yoghurt producers in Bulgaria by studying the essence of the concept of customer equity and, based on the current research, to design a model and toolkit for its future study and management. In order to achieve this aim the following tasks were identified and fulfilled: 1) study and analysis of the basic theories related to the essence of the concept of customer equity and different approaches to its management; 2) clarification of the role and significance of the concept of customer equity for the purpose of successful market presentation of the business organization; 3) identification of the main factors influencing customer equity; 4) design of a toolkit for research of the identified factors on customer equity of yoghurt producers in Bulgaria; 5) study and evaluation of the influence of the main determinants on customer equity value; 6) identification and rationale for the possibilities for customer equity management, including the design of a model and methodology for research and management of customer equity of yoghurt producers in Bulgaria.
Main theoretical conclusions of the Thesis

Based on the available literature and scientific research on the concept of customer equity, the relevant theoretical achievements have been identified and the author has presented their viewpoint on the concept in question. The following more significant conclusions have been made: 1) In the context of contemporary interpretation of the term ‘capital’, customer equity may be viewed as an exhibition of capital that refers to the value of the relationships with the clients of the business organization. 2) As a financial outcome of the relationships with the clients of an organization, customer equity can be managed. Therefore, it is essential to the managers to understand its nature, forms and growth opportunities. 3) The concept of customer equity paves the way to establishing and maintaining long-term relations with the clients of the organization. Understanding the concept creates opportunities for successful market performance of businesses and acquisition of competitive advantages. 4) Customer equity growth requires knowledge of the approaches to its management. Process (Blattberg et. al., 2001) and value (Rust et. al., 2005) approaches to managing customer equity have been defined. The first one is focused on raising customer equity through the analysis of profit and expense from and for clients, while the second approach is focused on raising customer equity through establishing long-term relationships with the clients. 5) The choice between these two approaches to managing customer equity requires the thorough understanding of their essence, focus and perspective. The evaluation of the results of their application is related to the ability to interpret the pre-existing models for calculation of customer equity and its management.

The presented advantages and disadvantages of the two approaches to managing customer equity in the Thesis argue that the value approach must be implemented as it provides opportunities for influencing client behaviour, thus prolonging the relationship between the business organization and its clients and, respectively, raising their worth in time. Therefore, the research is focused on yoghurt consumers for the following reasons: they determine product demand; they are the main necessary condition for the presence of business clients of yoghurt producers; researching them is a prerequisite to the application of a client-oriented approach by the producers. The Thesis aims to manifest customer equity determinants, their correlation as well as the direction and power of their influence on customer equity through which it can be managed. Identifying them allows for sustainable development of client relationships and provides opportunities for better market performance of industrial organizations.
Research methodology of customer equity of yoghurt producers in Bulgaria

Based on the performance and perspectives presented in front of the Bulgarian yoghurt and dairy producers, it has been concluded that the sector is an important part of the national economy for the following reasons: 1) dairy products and, specifically, yoghurt are traditional to the region; 2) despite the fact that dairy products consumption has dropped, the sustainability of the sector is retained; 3) dairy products account for 12% of the whole food products market which means that it has a guaranteed segment; 4) dairy producers are being consolidated and their market presence is growing; 5) the EU provides funding that, to a degree, guarantees the financing of the dairy sector; 6) international interest in our dairy products and hence the export of such goods is growing.

In view of the suggested general characterization of the Bulgarian yoghurt market and the anticipated future developments, it has been concluded that it is essential to organizations to develop their business in accordance with client needs in order to keep their client base and their position on the market.

A conceptual model for research has been designed in relation to the current data. Based on the examined peculiarities of yoghurt consumption, the designed conceptual model is directed to understanding the consumers and determining the key factors influencing their behavior, which represents their value to the organization. The model includes the definition of the main customer values to influence their choice of yoghurt, the relationships between them and their synergic effect on customer equity, with all conclusions based on theoretical analysis.

A methodological toolkit for research has also been designed. In order to identify the drivers that impact customer equity the most, three types of research have been conducted: formative research, a pilot study and basic marketing research. Qualitative and quantitative research has also been applied. The main determinants influencing yoghurt consumers have been presented and a pilot version of the questionnaire has been designed. As a result from the questionnaire testing, it can be concluded that the designed measures are reliable enough and valid for the purposes of the main research. Data analysis has been performed through parametric and non-parametric tests. A one-way analysis of variance and Pearson's chi-squared test have been conducted for the purpose of testing the hypotheses laid in the conceptual model. All preliminary verifications for abiding by the basic requirements for the application of the respective analyses have been performed. Descriptive statistics have been used for the purpose of composing the respondents’ profile.
Research of customer equity of Bulgarian yoghurt producers and recommendations for its management

The validity of the designed measures has been double tested with new data and during the main testing, following the approaches of Churchill (Churchill et. al. 1979) and Zhelev (Zhelev, 2000). Based on that, the application of factor analysis has been implemented as well as tests for convergent validity, discriminant validity of the scales and criteria for their reliability have been applied.

The results from the main research can be summarized to the following – all seven of the hypotheses have been confirmed. The following was concluded: 1) in accordance with the described and developed value approach, the drivers motivating yoghurt consumers to buy yoghurt from a specific producer in both the short and long run are: product equity, brand equity, relationship equity and the applied engineering and technology equity; 2) brand equity has positive influence on relationship equity determined through statistical analysis. Therefore, it is reasonable to conclude that by strengthening brand equity for clients, customer equity can be managed; 3) relationship equity with the organization also impacts customer equity of yoghurt producers. Through the identified components of that factor, organizations can establish sustainable relationships with their clients and turn them into loyal customers; 4) the impact of product equity on customer equity has also been confirmed. Therefore, it is of significant importance that organizations maintain the quality of their product in order to sustain their relationships with their clients; 6) the effect of the applied engineering and technology equity on customer equity has also been confirmed. Consequently, the implementation of technological improvements and maintenance of the traditional technology of yoghurt production by dairy companies, combined with the conduction of information campaigns on these matters, provides another opportunity to impact the consumers’ decision to buy a certain product and the relationships with clients; 7) in addition, the positive influence of brand equity on product equity and relationship equity with the organization has been confirmed. This shows that the brand is the main instrument of establishing long-term relationships with the clients of the organizations; 8) product equity is also the main driver impacting the desire of the consumers to keep their relationships with the company and a proof of that is the confirmed correlation between product equity and relationship equity.

Based on the obtained results from the main research, recommendations have been provided and customer equity management model for yoghurt producers in Bulgaria has been designed which presents the interconnected effect of the drivers on consumer behaviour.
Conclusion

It can be concluded that the current research provides both practical and applicable recommendations for the establishment and sustainable development of long-term relationships with business organization clients as well as raising customer equity as the main prerequisite for the successful market performance of the organization. In addition, the implementation of the designed model in firms from other sectors after preliminary determination of the variables forming customer equity of the respective sector has been proposed.

References

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