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AGGREGATE CONCENTRATION, MARKET SIZE AND EU INTEGRATION: EVIDENCE FROM SOUTHEAST EUROPE

Aleksandar Todorov

Abstract

This paper has two purposes: first, to map aggregate concentration, that is to estimate economic concentration among the largest companies, in the economies of Southeast Europe, and second, to assess how is the level of aggregate concentration related to market size, international trade and integration to the European Union. Based on company data from ten countries two types of concentration indices are computed – concentration ratio and Gini coefficient. The results suggest that aggregate concentration among the examined countries varies considerably. Although correlated, both measures of concentration seem to measure different aspects of economic concentration. Both measures decline with domestic market size, measured by country’s population. Foreign market size, measured as exports, seems to be positively associated with the concentration ratio, but not with the disparity among large companies. In addition, EU integration does not seem to have a significant effect on aggregate concentration at least for the sample at hand.

Keywords: economic power, size distribution of firms, large companies, international trade, EU integration

Introduction

The rise of economic power has gained importance in the former post-communist economies in the processes of economic and social transformation, globalization and the expansion of multinational companies. Large companies accumulate considerable resources, which in many cases provide them with the ability to exercise economic power exceeding the boundaries of a market. Therefore, the concentration of economic power has been of continuing interest to economists for decades, although research in this area has focused mostly on the proper ways to measure the phenomenon.
Economic concentration may be important for at least three reasons. First, concentration among large diversified companies in an economy increases the likelihood of exercising market power in and across individual markets (Gal & Cheng, 2016). This is particularly true for small economies as well as economies where weak regulatory institutions fail to respond adequately to market challenges (Mitton, 2007).

Second, higher concentration might be associated with higher levels of economic volatility and exacerbated systemic risk (Shaffer 2007). Additionally, Gabaix (2011) argues that aggregate shocks are initiated as shocks to individual firms. If the economy is “granular”, that is, if it is characterized by highly disproportioned firm size distribution, then shocks to the few relatively large firms trigger aggregate business fluctuations. Furthermore, Di Giovanni & Levchenko (2012) show that smaller, more open economies tend to be more granular than large ones.

Third, high concentration may lead to political distortions. If economic power is translated into political power, then the latter could be used to favor the interests of individuals or companies in highly concentrated sectors (see e.g. Acemoglu & Robinson, 2001). For instance, it could be used to gain governmental protection from potential competition (Ayal, 2013). The effect is emphasized when markets are smaller and where it is easier for the business elite to establish additional formal or non-formal networks of influence between large companies. As Bischoff & Buchwald (2018) show, such linkages may be a mechanism to facilitate collusion, which further enhances economic power.

In line with the above, the present paper focuses on the following three issues. First, an attempt is made to estimate the extent of aggregate concentration in ten Southeast European (SEE) economies. Second, given the estimates of aggregate concentration in SEE, and as proposed by previous research, a relation between aggregate concentration and the size of the economy in SEE is tested empirically. Third, the empirical test is expanded to include the effects of exports and EU membership on aggregate concentration in SEE.

The answers to these questions allow us to relate to the discussion of economic power and the role of market integration. Thus, it is hoped, to expand the already existing literature, which focuses mainly on the developed Western economies. The rest of the paper is structured as follows. The next Section 2 reviews some of the key points in the literature on aggregate concentration and its relation to market size, exports and market integration. This discussion allows formulation of the main hypotheses. Section 3 outlines the methodology and the data. Section 4 presents the empirical findings of the study. Finally, Section 5 concludes.
Literature Review

Economic concentration can generally be measured at two levels depending on the question to be studied: (1) for all firms classified as members of some market or industry, located within some specific geographical boundary or (2) for the largest firms in an economy, again located within some specific geographical boundary. Concentration at the industry level is referred to as market, or industry, concentration and is often taken as a proxy for market power. On the other hand, aggregate concentration at economy-wide level reflects the importance of the largest firms only and is therefore used as a proxy for economic power.

An early suggestion in the literature is that there is a link between aggregate concentration and market concentration. For example, Clark & Davis (1983) demonstrate that, theoretically, aggregate concentration could be decomposed into the product of three components: (1) the shares of individual industries; (2) the industry concentration; (3) the aggregate diversification. This result suggests that factors influencing the relative size of major industries, as well as determinants of market concentration and diversification may also have an impact on aggregate concentration.

A large body of research suggests that there is a negative relationship between domestic market size and concentration (see Gal, 2003 for an overview). This relationship is easily derived from standard microeconomic theory. In the case of fully “contestable” markets, these are markets with free entry and exit, market structure is endogenously determined by the natural conditions of production and demand. The number of competing firms in a market rises, ceteris paribus, with an increase in demand and decreases, when the minimum efficient scale (MES) is larger. This suggests that economies with smaller domestic markets should on average have more concentrated industries, ceteris paribus, and thus higher levels of aggregate concentration.

Empirical research has also shown that smaller economies suffer from high levels of MES relative to demand in many industries (Caves, 1989). On the contrary, in larger economies minimum efficient scales tend to be small relative to domestic demand. Thus, in smaller economies the number of firms with minimum efficient scales that the market can sustain is much smaller, which results in higher levels of concentration. Moreover, international studies of concentration have confirmed that market concentration is lower in larger economies (Mitton, 2008). As a result, aggregate concentration is expected to be higher in smaller economies.

Regarding the relationship between foreign market size, that is export, and concentration the literature suggests two alternative hypotheses: the national champion hypothesis and the domestic rivalry hypothesis (Bramati et al., 2015). According to
the national champion hypothesis, large firms are more likely to export because it enables them to exploit economies of scale and scope. Hence, the national champion hypothesis suggests a positive relationship between concentration and export levels.

The domestic rivalry hypothesis, on the other hand, argues that with more intense competition, i.e. lower industry concentration, there is pressure on domestic firms to increase their efficiency by increasing export levels. Because foreign demand is added to domestic demand, total demand is increased. This expansion could induce the creation of new plants and thus increases the number of firms an industry could sustain given its domestic and foreign demand. This would effectively result in a decrease in domestic industrial concentration. Based on the contradictory conclusions from both theoretical and empirical studies, a positive, negative or no relationship between exports and aggregate concentration can be expected.

Since the positive effect of export markets on scales of production has been explicitly considered into the formation of the European Union (EU), it is expected that the reduction of trade barriers in combination with the realization of a better ratio between demand and MES would lead to lower levels of industrial concentration, and thus to increased rivalry. At the same time further integration, as in the case of the introduction of common currency – the euro, is expected to increase price transparency, which would further intensify competitive pressure.

Recent research by Asaftei & Parmeter (2010) on market power and EU integration in the case of Romania finds that initially EU integration appears to increase competitive pressure, but as the effect of tariff reduction fades away, higher markups, a proxy of market power, become visible again. At the same time, Schulze (2016) provides empirical evidence that the introduction of the euro results in a reduction in the level of market concentration within the individual member states. This suggests that a common currency does matter for competition with countries in the euro currency union being more competitive than outsiders. The development of the single market has not had a large impact on competition. These contradictory results suggest that there seem to be a relationship between EU integration and concentration, the direction of this relationship, however, is an empirical question.

Methodology and Data

When estimating aggregate concentration, there are two methodological issues to consider first. These include researcher’s choice of (1) firm size measure, and (2) concentration measure. In the case of market concentration, economic theory suggests sales revenue as the proper size measure. When assessing aggregate concentration,
White (2002) considers value-added figures to be the most suitable candidate for the measurement of firm size. Value-added figures are, however, difficult to obtain, especially in an international context. Moreover, Gabaix (2011) argues that firm’s sales are to be preferred over value-added because sales capture the additional social value from productivity shocks.

To estimate the levels of aggregate concentration in SEE countries this study employs company data from SEE TOP 100 – an annual ranking of the largest companies in Southeast Europe (SeeNews, 2017). Companies are ranked by total revenue for the previous fiscal year. Thus, the data for this study is limited to sales figures only. The ranking covers non-financial companies in ten countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Montenegro, Romania, Serbia and Slovenia. The data is compiled from various sources (incl. national commercial registers, stock exchanges, as well as company reports) and covers a period of 10 years – from 2007 to 2016.

There is also a plethora of concentration indices to choose from. The various measures of economic concentration that have been used in past studies may be divided in two types: first, those which depend on the share of total economic activity controlled by a certain number of the largest firms in the economy, such as concentration ratio; and secondly, those which depend on the size distribution of firms, such as the Gini coefficient. The former measure provides information regarding what is known as absolute concentration, while the latter measure provides information regarding relative concentration.

Hart & Prais (1956) argue that absolute concentration ratios have the advantage over percentage concentration ratio, e.g. Gini coefficient, because the former provides information that is more suitable for assessing the likelihood of collusive or monopolistic behavior. In the case of a broader issue, however, such as the analysis of concentration within the whole economy, a summary measure of concentration based on the size distribution of firms, such as the Gini coefficient, might be preferable. In Hart & Prais’ interpretation, the Gini coefficient is a measure of average dominance in the group of firms under consideration. Moreover, disparity among the largest companies could be seen as proxy for the “granularity” of the economy in the sense of Gabaix (2011).

Nevertheless, much of the discussion regarding aggregate concentration is based on the calculation of concentration ratios. As Feinberg (1981) argues this seems as a logical extension of the tradition in the industry concentration literature. Concentration ratios have their appeal as they are relatively easy to calculate, but also their interpretation is straightforward. Furthermore, both measures carry different types of
information – while disparity measures are related to the concepts of inequality and granularity, concentration ratios are more closely related to the political and social consequences of large companies. It is the relative position of these companies, as White (1981) notes, that allows them to make political claims.

For the above reasons this study provides estimates for both types of concentration indices. Aggregate levels of absolute concentration are approximated using a ratio between revenues of the top 5 companies in each economy and its respective GDP in a given year. This is a rough approximation, because GDP figures do not correspond directly to revenue figures – a more precise measure would relate company revenue to economy wide revenues. Relative concentration is estimated by the Gini coefficient for the top 5 companies in each country.

Table 1 provides an overview of all variables used in the study. Dependent variables include, as discussed, concentration ratio by the top 5 firms (CR5), as well as Gini coefficient of the revenue for the top 5 firms (GINI5). Independent variables include measures of market size, which is operationalized as domestic market size and foreign market size. Domestic market size is approximated by country’s population (POP), while foreign market size is approximated as exports in percentage of GDP (EXP). The data for both variables stem from the World Bank’s World Development Indicators (WDI) database. Additionally, integration to the EU is measured as a dummy variable (EU), which equals 1, if the economy is a member of the EU, and 0 otherwise.

To account for other factors that might be related to aggregate concentration, two country characteristics are considered as control variables. First, a proxy for the intensity of labor use (LBI) is incorporated in the model. This seems reasonable because, as White (1981) argues, large firms tend to be more capital intensive. Labor intensity is proxied as employment in agriculture as share of total employment, for which data come from the WDI database. Thus, a negative relationship between labor intensity and concentration is expected.

Many studies on market concentration report a relationship between concentration and industry growth (see Curry & George, 1983 for an overview). It is believed, for instance, that entry barriers are lower for fast growing industries than for slow growing ones. Therefore, it seems reasonable to assume that concentration at economy level may also be related to growth. Because faster growing economies may attract more new companies or motivate the creation of new ones, a negative relationship between real GDP growth and aggregate concentration is expected. Thus, in the regression analysis growth is proxied by real GDP growth for which data is provided by the World Bank’s WDI database.
Table 1

Summary of Dependent, Independent and Control Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Code</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absolute Concentration</td>
<td>CR5</td>
<td>Revenue to GDP ratio for the top 5 companies in %.</td>
</tr>
<tr>
<td>Relative Concentration</td>
<td>GINI5</td>
<td>Gini coefficient for the top 5 companies.</td>
</tr>
<tr>
<td><strong>Independent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic Market Size</td>
<td>POP</td>
<td>Population of the economy in millions.</td>
</tr>
<tr>
<td>Foreign Market Size</td>
<td>EXP</td>
<td>Exports of goods and services (% of GDP).</td>
</tr>
<tr>
<td>EU Integration</td>
<td>EU</td>
<td>Dummy variable which is equal to 1, if the economy is a member of the EU, and 0 otherwise.</td>
</tr>
<tr>
<td><strong>Control Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor Intensity</td>
<td>LBI</td>
<td>Employment in agriculture (% of total employment).</td>
</tr>
<tr>
<td>Growth</td>
<td>GROWTH</td>
<td>GDP growth (annual %).</td>
</tr>
</tbody>
</table>

For the purposes of investigating the relationship between market size and aggregate concentration and testing the validity of the stated hypotheses, two panel data models are estimated. Model 1 uses CR5 as dependent variable, while the dependent variable in Model 2 is GINI5. The standard procedure to panel estimation is to use fixed effects estimator. By applying this procedure, however, the time-invariant variation between countries, i.e. the long-run variation, is wiped out (Kennedy, 2008).

In the case of the study at hand one is more interested in a long-run relationship. To question, for instance, how much would aggregate concentration rise, if population increases by 1 percentage, seems to provide little economic insight. Moreover, the EU dummy variable does not change over time, while most of the other explanatory variables, population and employment in agriculture most notably, change little over time or at least very slowly. So here more consideration should be given to cross-sectional variation.

Two alternative approaches to the fixed effect estimator are the pooled OLS estimator and the random effects estimator. While the pooled OLS estimator does not take the panel structure of the data into account, the random estimator gives a more comprehensive model since it uses a weighted average of the between-country and the within-country (over time) estimations. For instance, Bell & Jones (2015) consider the fixed effects model as a constrained form of the random effects model.
ver, they show that in situations, when the variation between countries is of essence, the fixed effects model may provide misleading results. For these reasons, the reported results are narrowed to these from the random effects estimation. Additionally, time effects are included in each of the models to capture the influence of aggregate time trends. Estimation procedures are performed in R (R Core Team, 2017).

Results

Descriptive statistics for the data are reported in Table 2. Panel A in the table contains mean, median, standard deviation, minimum, maximum, as well as measures of skewness and kurtosis for the numerical values. Panel B provides frequencies and percentages for the dummy variable, EU membership.

Table 2

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CR5</td>
<td>98</td>
<td>18.76</td>
<td>18.98</td>
<td>5.65</td>
<td>7.46</td>
<td>29.31</td>
<td>-0.04</td>
<td>-0.97</td>
</tr>
<tr>
<td>GINI5</td>
<td>98</td>
<td>21.09</td>
<td>20.68</td>
<td>7.08</td>
<td>4.75</td>
<td>48.95</td>
<td>0.90</td>
<td>1.96</td>
</tr>
<tr>
<td>POP</td>
<td>98</td>
<td>5.48</td>
<td>3.86</td>
<td>5.41</td>
<td>0.62</td>
<td>21.13</td>
<td>1.94</td>
<td>2.77</td>
</tr>
<tr>
<td>EXP</td>
<td>98</td>
<td>43.14</td>
<td>41.27</td>
<td>13.00</td>
<td>25.01</td>
<td>77.65</td>
<td>0.95</td>
<td>0.30</td>
</tr>
<tr>
<td>LBI</td>
<td>98</td>
<td>18.92</td>
<td>18.00</td>
<td>10.82</td>
<td>4.60</td>
<td>46.50</td>
<td>0.72</td>
<td>-0.18</td>
</tr>
<tr>
<td>GROWTH</td>
<td>98</td>
<td>1.98</td>
<td>2.40</td>
<td>3.52</td>
<td>-7.80</td>
<td>10.70</td>
<td>-0.41</td>
<td>0.57</td>
</tr>
</tbody>
</table>

Panel B: Dummy Variable

<table>
<thead>
<tr>
<th>EU Membership</th>
<th>Frequency</th>
<th>Valid Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitive (1)</td>
<td>40</td>
<td>40.8</td>
</tr>
<tr>
<td>Non-Sensitive (0)</td>
<td>58</td>
<td>59.2</td>
</tr>
<tr>
<td>Total</td>
<td>98</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes: The Gini coefficient is calculated using R’s package “ineq” for the Gini coefficient (Zeileis, 2014) and is standardized to range from 0 to a maximum of 100.

The mean values of the dependent variables, CR5 and GINI5, for the whole sample are 18.76 and 21.09 respectively. The CR5 variable ranges from 7.46 to 29.31, while the GINI5 variable ranges from 4.75 to 48.95. These figures suggest that there is some variation of aggregate concentration in the sample at hand. Noteworthy, the measures of skewness and kurtosis for these variables differ significantly supporting
the notion in the methodology that they measure different aspects of aggregate concentration. This issue is further explored in Table 3, which provides the mean values for both variables on a country level.

Table 3

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>CR5</th>
<th>Rank</th>
<th>Country</th>
<th>GINI5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Macedonia</td>
<td>25.93</td>
<td>1</td>
<td>Montenegro</td>
<td>28.44</td>
</tr>
<tr>
<td>2</td>
<td>Montenegro</td>
<td>22.96</td>
<td>2</td>
<td>Croatia</td>
<td>26.71</td>
</tr>
<tr>
<td>3</td>
<td>Bulgaria</td>
<td>22.44</td>
<td>3</td>
<td>Moldova</td>
<td>24.06</td>
</tr>
<tr>
<td>4</td>
<td>Slovenia</td>
<td>21.73</td>
<td>4</td>
<td>Bulgaria</td>
<td>22.46</td>
</tr>
<tr>
<td>5</td>
<td>Serbia</td>
<td>20.18</td>
<td>5</td>
<td>Slovenia</td>
<td>20.59</td>
</tr>
<tr>
<td>6</td>
<td>Croatia</td>
<td>18.21</td>
<td>6</td>
<td>Macedonia</td>
<td>20.53</td>
</tr>
<tr>
<td>7</td>
<td>Moldova</td>
<td>17.49</td>
<td>7</td>
<td>Serbia</td>
<td>20.34</td>
</tr>
<tr>
<td>8</td>
<td>Bosnia</td>
<td>14.43</td>
<td>8</td>
<td>Albania</td>
<td>18.75</td>
</tr>
<tr>
<td>9</td>
<td>Albania</td>
<td>13.34</td>
<td>9</td>
<td>Romania</td>
<td>16.96</td>
</tr>
<tr>
<td>10</td>
<td>Romania</td>
<td>9.80</td>
<td>10</td>
<td>Bosnia</td>
<td>11.64</td>
</tr>
</tbody>
</table>

Notes: Mean values over the period from 2007 to 2016. For Albania the period covered is from 2009 to 2016. Detailed country data is available on request from the author.

For instance, in Table 3 Croatia has a rank of 6 when aggregate concentration is measured by CR5 but ranks 2 when measured by the GINI5. Large discrepancies are also present in the cases of Macedonia, Moldova and Serbia. That these two measures are quite different is also obvious from the correlation matrix for the data presented in Table 4. Although significant at the 5% level the Pearson correlation coefficient between CR5 and GINI5 has a rather moderate value of 0.34. This further confirms that both measures describe different aspects for the same phenomenon.

Regarding the independent variables, Table 3 shows that population of the SEE economies considered here ranges from 0.62 to 21.13 million people with a mean value of 5.48 million people. Exports, as percentage of GDP, range from 25.01% to 77.65% with a mean value of 43.14% for the whole sample. At the same time about 41% percent of the observations stem from countries, which are members of the EU, while the remaining 59% are from countries outside the EU, as shown in Panel B of Table 3.

Control variables include labor intensity, measured as employment in agriculture in percentage of labor force, and growth of real GDP. Labor intensity, that is employ-
ment in agriculture, ranges from 4.60% to 46.50% with a mean of 18.92%. Growth ranges from -7.80% to 10.70% with a mean of 1.98.

The results of the Pearson correlation analysis in Table 4 indicate that both CR5 and GINI5 are negatively correlated with population, with correlation coefficients of -0.53 and -0.22 respectively – both significant at the 5% level. Both measures are positively correlated with exports with the correlation between CR5 and EXP being more pronounced. EU membership is negatively, not significantly, correlated with CR5, and positively, again not significantly correlated with GINI5. For the control variables, labor intensity is found to be negatively (strongly and significantly) correlated with both measures of aggregate concentration.

Table 4

<table>
<thead>
<tr>
<th>Variables</th>
<th>CR5</th>
<th>GINI5</th>
<th>POP</th>
<th>EXP</th>
<th>EU</th>
<th>LBI</th>
<th>GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GINI5</td>
<td>0.34*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POP</td>
<td>-0.53*</td>
<td>-0.22*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EXP</td>
<td>0.46*</td>
<td>0.19</td>
<td>-0.20*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EU</td>
<td>-0.11</td>
<td>0.07</td>
<td>0.46*</td>
<td>0.52*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LBI</td>
<td>-0.54*</td>
<td>-0.28*</td>
<td>0.16</td>
<td>-0.31*</td>
<td>-0.13</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.01</td>
<td>0.13</td>
<td>0.01</td>
<td>0.01</td>
<td>-0.16</td>
<td>0.10</td>
<td>1</td>
</tr>
</tbody>
</table>

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

Considering the strong statistical association between exports and EU membership, two basic regressions are performed for each measure of aggregate concentration, that is for each of the two models – Model 1 and Model 2. As discussed in the methodological section the estimation is narrowed to a random effects model with time effects. The regression results are presented in Table 5.
**Table 5**

Regression Results from Random Effects Model with Time Effects

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>CR5</th>
<th>GINI5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1a</td>
<td>Model 1b</td>
</tr>
<tr>
<td>POP</td>
<td>-0.43***</td>
<td>-0.51***</td>
</tr>
<tr>
<td></td>
<td>(0.07)</td>
<td>(0.08)</td>
</tr>
<tr>
<td>EXP</td>
<td>0.11***</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(0.04)</td>
<td></td>
</tr>
<tr>
<td>EU</td>
<td>-</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.66)</td>
</tr>
<tr>
<td>LBI</td>
<td>-0.21***</td>
<td>-0.24***</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.09</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(0.13)</td>
<td>(0.15)</td>
</tr>
<tr>
<td>Obs.</td>
<td>98</td>
<td>98</td>
</tr>
<tr>
<td>R²</td>
<td>0.55</td>
<td>0.51</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>0.53</td>
<td>0.49</td>
</tr>
<tr>
<td>F-statistic</td>
<td>28.16</td>
<td>24.52</td>
</tr>
<tr>
<td>p-value of F-statistic</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

**Notes:** The quantities in parentheses below the estimates are heteroskedasticity robust standard errors. Coefficients statistically significant at the 1%, 5%, and 10% level are denoted, respectively, by ***, **, and *. Author’s calculations using R’s “plm” package (Croissant & Millo, 2008 and Millo, 2017).

Models 1 and 2 are estimated in two variations. Models 1a and 2a use exports as one of the explanatory variables. Models 1b and 2b use the EU dummy as one of the explanatory variables instead. According to Table 5, the F-statistic for the CR5 models is 28.16 (p = 0.00) for Model 1a and 24.52 (p = 0.00) for Model 1b respectively. The F-statistic for the GINI5 models is 3.77 (p = 0.01) for Model 2a and 4.56 (p = 0.00) for Model 2b respectively. Thus, both models, Model 1 and 2, appear to be statistically significant with Model 1 performing a bit better. This is also evident from the adjusted R-squared values – about 0.50 for Models 1a an 1b, and about 0.10 for Models 2a and 2b.

The results also indicate that, as hypothesized, there is a negative and statistically significant relation between aggregate concentration and domestic market size (p = 0.00 for Models 1a and 1b, p = 0.08 for Model 2a, and p = 0.00 for Model 2b).
The implication is that economies with larger domestic markets tend to be populated with a greater number of large companies of similar sizes. In other words, aggregate concentration is lower in larger economies. The result holds for both measures. It is consistent with results from studies on market concentration and seem to hold to aggregate concentration in SEE as well.

On the other hand, the coefficient for exports is positive and statistically significant only in Model 1a \((p = 0.00)\) and not in Model 2a \((p = 0.64)\). This result suggests that for the SEE economies exports seem to influence positively larger companies stronger than smaller ones, but at the same time this influence is relatively equally distributed among top firms. These results are consistent with the national champion hypothesis, as well as with the results on granularity (as shown in Di Giovanni & Levchenko, 2012). At the same time, EU membership, although highly correlated with export, has a positive coefficient in both models, but it is not statistically significant \((p = 0.63\) for Model 1a and \(p = 0.24\) for Model 2b). These latter results suggest that EU membership has no effect on aggregate concentration, but they may also be due to the small sample size.

For the control variables, the results from the regression analysis indicate that there is a negative relationship between labor intensity, measured as employment in agriculture, and aggregate concentration. Notably, this relationship is highly significant in both models for the SEE economies. This is consistent with the notion that economies with less capital-intensive industries have on average lower aggregate concentration ratios since capital-intensive firms are more likely to be larger. Real economic growth does not seem to play much of a role for aggregate concentration, as it is slightly significant only in Model 2b.

**Conclusion**

The problem of economic concentration has been studied profoundly in the developed economies. This has been done by identifying the amount of economic activity controlled by the largest firms. In the case of Eastern Europe, however, there are very few attempts to assess aggregate concentration. Most of the concentration studies are either conducted at the industry level (see, e.g., Marginean & Toma, 2011) or are focused on a single economy (see, e.g., Todorov, 2017). The study at hand has made such an attempt by estimating the levels of aggregate concentration in ten countries in Southeast Europe. Furthermore, the study provides empirical evidence on regularities concerning the relationship between concentration, market size and international trade.

Levels of aggregate concentration have been approached from two sides. First, on a basis of a concentration ratio between sales revenue and GDP in each of the 10
countries under consideration the study finds that there is some variation between these economies. For instance, in Macedonia sales revenue of the top 5 largest companies account on average for about one fourth (about 26%) of country’s current GDP. At the same time the corresponding figure for Serbia is one fifth (about 20%), and for Romania – one tenth (about 10%). These differences could be attributed to differences in domestic market size, measured by country’s population, to differences in foreign market size, measured by country’s export as percentage of GDP, as well as to differences in the labor intensity of the economy, measured by the employment in agriculture as percentage of total employment.

Another way to look at aggregate concentration is to estimate a measure of inequality between the largest companies. The Gini coefficient provides such a measure. Although correlated with the concentration ratio, this measure seems to reflect a different aspect of economic power. For instance, the distribution of revenue among top 5 companies in SEE economies is relatively highly skewed in Montenegro, with Gini of about 28, moderately skewed in Slovenia, with Gini of about 21, and relatively low skewed in Bosnia, with a Gini of 12. These differences are mostly due to differences in domestic market size and labor intensity. Exports seem to play a less prominent role here.

Although estimates of aggregate concentration provided by this study are relatively rough, they shed new light on concentration issues in Southeast Europe. The empirical results imply, for instance, that smaller economies in the SEE region should be more cautious regarding mergers involving large and diversified companies, since these are expected to increase aggregate concentration and thus economic power in the region. Policies aiming at expanding domestic markets should be oriented towards smaller enterprises, since export seems to have a positive effect on aggregate concentration. This should be accompanied with efforts for tighter integration into the common EU market – an issue which involves not only the introduction of the common currency, but also strengthening domestic institutions.

References


WORKING CAPITAL MANAGEMENT PRACTICES AND PROFITABILITY IN NIGERIA

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JEL G30, 39 Abstract

The paper investigates the effect of working capital management practices on profitability of twenty-five Nigerian listed non-financial firms between financial years, 2010 and 2016. Pooled ordinary least squares (POLS) and Random effects generalised least squares (REGLS) were employed as data analytical tools. Result indicates that three of the components of working capital management practices (average collection period, inventory turnover period and cash conversion cycle) have significant influence on profitability of Nigerian firms. It therefore suggests that proper management of components of working capital is a means by which profitability and shareholders’ value can be increased. The outcome provides empirical evidence that Nigerian firms used aggressive policy as a working capital management practice in achieving organisational success during the period of study.

Keywords:
Aggressive policy, Cash conversion cycle, Nigeria, Profitability, Working capital.

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Introduction

Working capital can be described as the difference between current assets and liabilities that are due for payment within a year, i.e. current liabilities. It is necessary because of the time lag between purchases of items relevant for the production of goods were made and finished goods were sold. The efficient management of these two varia-
bles in such a way that will enhance liquidity, profitability and shareholders’ wealth is therefore essential for any business entity, especially manufacturing companies, whose inventories constitute between 50% and 70% of their total assets.

Efficiency in the management of working capital requires both scientific and professional knowledge and skill in the determination of the optimum working capital items necessary in the operating cycle and the amount to be invested at any point in time. If this level is achieved, the potential risk of under or over investment in working capital is completely eliminated; it will also help in boosting shareholders’ value (Aktas, Croci and Petmezas, 2015); and guarantee stability, reliability, growth and consistency of the firm (Khatik & Varghese, 2015).

In financial management literature the importance of profit maximization as an objective of a business entity and liquidity management are well documented. This is the reason why corporate entities try as much as possible to make profit year–in-year–out. It is out of the profit that providers of capital will be compensated in the form of dividend payment. Also, potential investors will only be interested in businesses that are profitable so as to ensure adequate returns on their investments. Liquidity, on the other hand, is essential so as the operation of the firm is not disrupted. An organization with liquidity problems will find it extremely difficult to discharge its outstanding short-term bills and this may affect production, sales, contribution and profit. This implies that the organization should manage its working capital in order to reach a compromise between liquidity and profitability as both are important for any entity’s survival and growth.

The problem statement of this study involves corporate managers’ ability to balance the liquidity-profitability nexus. This is viewed from two angles. Firstly, both over and under investment in working capital are not ideal as sales and profitability are affected negatively. Secondly, an organization that is profitable does not mean that the organization is liquid. How the management tackles the twin issue of profitability-liquidity nexus using working capital management practices to impact on profitability, is the major concern of this study.

Attention of researchers on studies of the roles of finance managers in corporate organisations, as documented in literature, leans towards long–term finance issues, such as capital structure and dividend policy. Fewer efforts have been devoted to short-term finance studies, of which working capital is paramount. In Nigeria for instance, attempts have been made at working capital management studies by Olufisayo (2007), Onwumere, Ibe and Ugbani (2012), Nwidobie (2012), Oladipupo and Okafor (2013), Angahar and Alematu (2014) and Osundina (2014). However, most of the findings of these studies are mixed and unclear. This might be due to
different measurement proxies used to capture working capital and financial performance; diverse methodologies and study time frame.

The primary objective of this study was to empirically examine the effect of working capital management practices on the profitability of Nigerian firms. Specifically and in line with what was obtained in prior studies, the effect of four working capital management practices—average payment period, inventory turnover period, average payment period and cash conversion cycle on profitability were investigated.

This present study tried to mitigate the shortcomings noticed in prior studies (such as, Owolabi and Alu, 2012 and Nwodobie, 2012) by using data from five sectors for seven-year period and perhaps better data analytical tools.

1. Theoretical framework

Modern working capital management theories are predicated on risk/return trade-off among different feasible strategies (Moyer, McGuigan & Kretlow 2006). Here, two alternative strategies of managing working capital are proposed. These are aggressive and conservative working capital strategies.

Aggressive working capital policy requires, for instance, establishing a tight credit line and collection procedure for customers. Overall, the investment in working capital will be kept at a low level. Although, most of the marginal customers may be adversely affected, this policy yields higher returns and higher risk. Empirically, an organisation that adopts an aggressive working capital is expected to have an inverse association between cash conversion cycle (CCC) and profitability.

Conservative working capital policy is identified with lower returns and lower risk (Ahanga & Shah, 2017). This policy involves commitment of huge sum to working capital with the hope that this will yield higher returns. For instance, inventories will be at high level as this guarantees smooth production process and sales. The increased sales lead to increased contribution and profit. The debt collection procedure is a bit relaxed, as customers will be given enough time to consider and distinguish between different products purchased (Deloof and Jegers, 1996) and verify quality of product before bills are paid (Lee and Stowe, 1993), thereby strengthening the long-term relationship with customers (Wilmer, 2000 cited in Ahanga & Shah, 2017). Empirically, a positive signal is expected between CCC and profitability.

In determining the working capital management approach in use by firms in different countries of the world several studies were conducted. Several such studies are briefly discussed in turn.
Owolabi and Alu (2012) examined the extent to which working capital management practices influence the profitability of five Nigerian listed firms over the period 2006 to 2010. Findings revealed that each of the components affected the company’s profitability at varying levels but these results produced insignificant effect when the different components were combined together as a pool.

Rehn (2012) assessed the effects of working capital management on profitability of 1,789 manufacturing organisations in Sweden and Finland during the period 2002-2010. Pooled ordinary least squares result revealed that CCC and net trade cycle have significant effects on corporate profitability.

Onodje (2014) used data from 75 listed Nigerian manufacturing firms for the period from 2002-2011 to determine whether working capital management affects profitability. The results of 3 different data analytical tools used revealed that CCC was inversely related to financial performance.

Konak and Guner (2016) studied the impact of working capital management on performance of 29 companies listed in Bursa Istanbul SMEs industrial index, Turkey for the period covering 2011-2014. Result of the pooled OLS technique indicated an inverse association between net margin and CCC, short term debt and turnover in days.

Lyngstadas and Berg (2016) explored the influence of working capital management on profitability of 21,075 Norwegian companies for 2010-2013. The result of panel regressions analysis showed that working capital management proxies (inventory held, debtor payment period and account payable) individually and collectively had influence on profitability of sample firms.

Yunos, Ahmad, Ghapar and Sungi (2018) assessed the effect of working capital management on performance of 803 Malaysian companies during financial years covering 2010-2014. Fixed effects model was adopted as estimation tool and results revealed that inventory turnover and account receivable in days have inverse effect on ROA and Tobin’s Q. Account payable days and CCC have no influence on performance.

Korent and Orsag (2018) used data from 442 software companies in Croatia for 2008-2013 to investigate the impact of working capital management on profitability. Regression result showed a nonlinear, concave quadratic association between working capital and profitability (ROA).

Al-Abass (2018) studied the effect of working capital management on profitability of 30 listed companies in three sectors of Pakistan for the period 2001-2016. The simple pooled OLS result indicated an indirect association between CCC and ROA.
2. Methodology and data

2.1. Research design and source of data

The study adopted an ex-post facto research design using published historical data to establish the link between the two variables in Nigerian firms. Data were gathered from secondary source published annual financial statements and accounts of the selected companies. These accounts were available on the websites of the selected firms and Nigerian Stock Exchange Fact Book.

2.2. Population, sample and sampling technique

The study population consists of 105 listed non-financial companies in eight sectors of the Nigerian Stock Exchange as of June 30, 2018. With the adoption of purposeful sampling technique, twenty-five firms in five sectors (consumer goods/services, industrials, oil & gas, basic materials and health care), which represented about 24% of the population and which provided complete data set necessary for the study were selected as sample.

2.3. Data analysis instrument

Panel data methodology and multiple regression method were employed for data analysis. In line with some prior studies (see Rehn, 2012, Khamrui and Bagchi (2012), Konak and Guner, 2016, Lyngstadas and Berg, 2016 and Al-Abass, 2018), pooled OLS was used as estimation technique.

2.4. Variable description and development of hypotheses

Dependent variable

Return on assets (ROA): It is an accounting-based measurement of management’s efficiency in the use of resources entrusted with them by the owners of the business. It is mostly used in the literature as a proxy for profitability (Raheman, Afza, Qayyum, & Bodla, 2010, Owolabi & Alu, 2012, Makori & Jagoogo, 2013, Lyngstadas & Berg, 2016, Konak & Guner, 2016 and Yunus et al. 2018). This study adopted ROA as the only dependent variable.

Independent variables

The study employed four different variables as surrogates of working capital management practices. These are classified as independent variables and are briefly discussed in turn:
**Average collection period (ACP):** In order to increase sales, corporate organisations usually extend credit facilities to willing customers. This usually occurs when new products are introduced into the market and when intense competition within the industry demands it. However, if the collection of debts outstanding is not properly managed, the long-run survival of the organization may be affected. Thus, reduction in ACP is expected to increase profitability (Mathuva, 2010, Vahid, Ejham & Ebrati, 2012, Abdullah, 2014, Pais & Gama, 2015, Konak & Guner, 2016, Lyngstadas & Berg, 2016 and Yunos et al., 2018). The following null hypothesis is developed:

\[ H_{01}: \text{Average collection period has no significant relationship with profitability.} \]

**Inventory turnover period (ITP):** This is simply the number of days taken to hold inventories before they are sold. Inventories are necessary for production of goods and this must be properly managed. Inadequate inventories result in stock-out and production will be impaired leading to loss of sales, contribution and profit. On the other hand, huge inventories level results in unnecessary tying up capital, which would have been used to generate returns. Also, it may lead to wastage if finished goods remain unsold and got spoilt. Some empirical studies, such as the ones done by Afeef (2011), Napompech (2012), Almazari (2014), Rezaei and Pourali (2015) and Yunos, et al. (2018), revealed an inverse association between ITP and profitability. Hence, an inverse signal between ITP and profitability is expected. The following null hypothesis is developed:

\[ H_{02}: \text{Inventory turnover period has no significant relationship with profitability.} \]

**Average payable period (APP):** This is defined as the time it will take a business organisation to offset bills outstanding. Corporate organisations do obtain credit facilities, especially from suppliers of raw materials and other consumables needed for production of goods. This invariably assists these organizations in utilising funds which would have been paid now (on cash basis and with or no discounts) to other ventures. Thus, most organisations make best use of this mode as a short-term finance source by delaying payments to providers of credit facilities. However, proper management of accounts payable is very important. This is because if the company fails to meet up with its obligations as at when due, the provider of the facility may cut the level of credit facility to be granted in the future or resort to outright blacklisting of the organisation by removing it from the list of credit worthy customers. Consistent with some prior studies (see Sabri, 2012, Zakaria and Amin, 2013, Makori and Jagongo, 2013, Agha, 2014, Abdullah, 2014 and Rezaei and
Pourali, 2015), a direct relationship between APP and ROA is expected. The following null hypothesis is developed:

\[ H_{o3}: \text{Average payment period has no significant relationship with profitability.} \]

**Cash conversion cycle (CCC):** This is the period between cash outflows that result from purchase of materials and cash inflows from sales of finished goods. CCC is considered by Richards and Laughlin (1980) cited in Yunos, et al. (2018) as the prominent measurement of working capital management and a standard measure of operational efficiency of firms. All the constituents of other working capital management practices (ACP, ITP and APP) constitute the CCC. A good understanding of CCC requires that if all the three constituents are properly managed, then CCC will have impact on profitability and enhance the wealth of shareholders. Most evidences in empirical literature supported a negative relationship between CCC and profitability (see Dong & Su, 2010, Vural, Sokmen & Cetenak, 2012, Makori & Jagongo, 2013, Zakaria & Amin, 2013, Rezaei & Pourali, 2015 and Konak & Guner, 2016). The study therefore expects an inverse effect of CCC on profitability. The following null hypothesis is developed:

\[ H_{o4}: \text{Cash conversion cycle has no significant relationship with profitability.} \]

**Control variables**

In order to make an unbiased inference, four parameters that are likely to have effect on profitability are introduced in this study as control variables. If control variables are not included, the likelihood of making bias inference will be high. The control variables are current asset to total asset ratio (CATAR), current liability to total asset ratio (CLTAR), current ratio (CR) and size (SZ).

**2.5. Model specification**

Panel data methodology was adopted as a result of the panel character of data. Specifically, the study’s models are as stated in equations 2.1a, 2.1b, 2.1c and 2.1d:

Model 1: \[ \text{ROA}_{it} = \beta_0 + \beta_1 \text{ACP}_{it} + \beta_2 \text{CATAR}_{it} + \beta_3 \text{CLTAR}_{it} + \beta_4 \text{CR}_{it} + \beta_5 \text{SZ}_{it} + \epsilon_{it} \ldots \] (2.1a)

Model 2: \[ \text{ROA}_{it} = \beta_0 + \beta_1 \text{ITP}_{it} + \beta_2 \text{CATAR}_{it} + \beta_3 \text{CLTAR}_{it} + \beta_4 \text{CR}_{it} + \beta_5 \text{SZ}_{it} + \epsilon_{it} \ldots \] (2.1b)

Model 3: \[ \text{ROA}_{it} = \beta_0 + \beta_1 \text{APP}_{it} + \beta_2 \text{CATAR}_{it} + \beta_3 \text{CLTAR}_{it} + \beta_4 \text{CR}_{it} + \beta_5 \text{SZ}_{it} + \epsilon_{it} \ldots \] (2.1c)

Model 4: \[ \text{ROA}_{it} = \beta_0 + \beta_1 \text{CCC}_{it} + \beta_2 \text{CATAR}_{it} + \beta_3 \text{CLTAR}_{it} + \beta_4 \text{CR}_{it} + \beta_5 \text{SZ}_{it} + \epsilon_{it} \ldots \] (2.1d)

Where, all the variables are as defined in Table 1.
2.6 Measurement

Table 1 depicts the measurement of the study’s variables.

Table 1

<table>
<thead>
<tr>
<th>Variable</th>
<th>Abbreviation</th>
<th>Measurement</th>
<th>a priori signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on assets</td>
<td>ROA</td>
<td>Profit after tax</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total asset</td>
<td></td>
</tr>
<tr>
<td>Average collection period</td>
<td>ACP</td>
<td>Debtors  x 365</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Net sales</td>
<td></td>
</tr>
<tr>
<td>Inventory turnover period</td>
<td>ITP</td>
<td>Closing inventory  x 365</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost of goods sold</td>
<td></td>
</tr>
<tr>
<td>Average payment period</td>
<td>APP</td>
<td>Creditors  x 365</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchases</td>
<td></td>
</tr>
<tr>
<td>Cash collection cycle</td>
<td>CCC</td>
<td>ACP + ITP - APP</td>
<td>-</td>
</tr>
<tr>
<td>Current asset to total asset ratio</td>
<td>CATAR</td>
<td>Current asset</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total asset</td>
<td></td>
</tr>
<tr>
<td>Current liability to total asset ratio</td>
<td>CLTAR</td>
<td>Current liability</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total asset</td>
<td></td>
</tr>
<tr>
<td>Current ratio</td>
<td>CR</td>
<td>Current asset</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current liability</td>
<td></td>
</tr>
<tr>
<td>Size of the firm</td>
<td>SZ</td>
<td>Log of total asset</td>
<td>+</td>
</tr>
</tbody>
</table>

Source: Adapted from relevant empirical literature (2018).

3. Results and discussion

3.1. Descriptive statistics

Descriptive statistics results are reported in Table 2. It reveals that average ROA is 6.8% and this ranges between -19.2% and 33.3%. Average collection of debts outstanding of the sample firms is 52 days and this takes between about 1.4 days and about 411 days to be collected. It takes inventories to stay in the warehouse before being sold between 12 days and 603 day, with an average period of 137 days. The firms spend an average of 68 days to offset bills and this ranges between 1 day and about 395 days.
### Summary of Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>0.068</td>
<td>-0.192</td>
<td>0.333</td>
<td>0.074</td>
</tr>
<tr>
<td>ACP</td>
<td>52.413</td>
<td>1.400</td>
<td>410.570</td>
<td>53.734</td>
</tr>
<tr>
<td>ITP</td>
<td>137.470</td>
<td>12.290</td>
<td>603.110</td>
<td>110.074</td>
</tr>
<tr>
<td>APP</td>
<td>68.208</td>
<td>1.080</td>
<td>394.600</td>
<td>77.005</td>
</tr>
<tr>
<td>CCC</td>
<td>133.970</td>
<td>-250.220</td>
<td>602.330</td>
<td>133.131</td>
</tr>
<tr>
<td>CATAR</td>
<td>0.630</td>
<td>-0.200</td>
<td>0.996</td>
<td>0.192</td>
</tr>
<tr>
<td>CLTAR</td>
<td>0.502</td>
<td>0.058</td>
<td>0.950</td>
<td>0.193</td>
</tr>
<tr>
<td>CR</td>
<td>1.400</td>
<td>0.350</td>
<td>4.650</td>
<td>0.634</td>
</tr>
<tr>
<td>SZ</td>
<td>9.783</td>
<td>8.196</td>
<td>12.699</td>
<td>0.782</td>
</tr>
</tbody>
</table>

**Source:** Authors’ computation (2018).

The time lag between the purchases of inventories and the cash received from sales (CCC), on the average is about 134 days. The average current ratio (CR) is 1.4:1 (which is below the acceptable threshold of 2:1), although it is as high as 4.65:1 for some firms. Firm size is about N6.2 billion or US$20 million (log inverse 9.783). Current asset to total asset ratio (CATAR) has an average of 0.63 and that of current liability to total asset ratio (CLTAR) is 0.502. The variable with the highest variability from the mean is CCC with standard deviation of 133 and the one with the least variability is ROA with standard deviation of 0.074.

### 3.2. Correlation

Table 3 presents the result of correlation coefficients between the study’s variables. Average collection period (ACP) and cash conversion cycle (CCC) have negative and significant association with profitability, ROA at 1% level. This suggests that the higher the ACP and CCC, the lower the profit. The association between inventory turnover period (ITP) and profitability is negative but insignificant. Average payment period (APP) and ROA correlate with each other positively, but this association is insignificant.
Table 3

Correlation Matrix

<table>
<thead>
<tr>
<th>Var</th>
<th>ROA</th>
<th>ACP</th>
<th>ITP</th>
<th>APP</th>
<th>CCC</th>
<th>CATAR</th>
<th>CLTAR</th>
<th>CR</th>
<th>SZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACP</td>
<td>-0.287**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITP</td>
<td>-0.073</td>
<td>0.105</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.340)</td>
<td>(0.165)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP</td>
<td>0.093</td>
<td>0.093</td>
<td>0.048</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>(0.223)</td>
<td>(0.223)</td>
<td>(0.526)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCC</td>
<td>-0.201***</td>
<td>0.420***</td>
<td>0.726***</td>
<td>-0.324***</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.008)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CATAR</td>
<td>0.100</td>
<td>0.201***</td>
<td>0.043</td>
<td>-0.255***</td>
<td>0.258***</td>
<td>1</td>
<td></td>
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<tr>
<td></td>
<td>(0.189)</td>
<td>(0.008)</td>
<td>(0.572)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLTAR</td>
<td>-0.376</td>
<td>-0.218***</td>
<td>-0.308***</td>
<td>-0.199***</td>
<td>0.164**</td>
<td>0.340***</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.004)</td>
<td>(0.000)</td>
<td>(0.008)</td>
<td>(0.030)</td>
<td>(0.000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CR</td>
<td>0.329***</td>
<td>0.017</td>
<td>0.381***</td>
<td>-0.015</td>
<td>0.469***</td>
<td>0.391***</td>
<td>-0.630***</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.000)</td>
<td>(0.825)</td>
<td>(0.000)</td>
<td>(0.841)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SZ</td>
<td>0.230***</td>
<td>-0.217***</td>
<td>0.481***</td>
<td>0.175**</td>
<td>-0.496***</td>
<td>-0.389***</td>
<td>0.045</td>
<td>-0.368***</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>(0.002)</td>
<td>(0.004)</td>
<td>(0.000)</td>
<td>(0.021)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.000)</td>
<td>(0.551)</td>
<td></td>
</tr>
</tbody>
</table>

*, **, *** represent significant at 10%, 5% and 1% level, respectively.

Source: Authors’ computation (2018).

3.3. Collinearity test

A test for the presence of multicollinearity between the explanatory variables was conducted with Variance Inflation Factor (VIF) approach. The major advantage of VIF is that it has the ability to filter from the model the variable (s) that may distort the regression result (Gujarati & Sangeetha, 2008). Table 4 depicts the multicollinearity test result.


As shown in Table 4, no variable has VIF of more than 10; it ranges between 1.690 and 6.846 and with average value of 4.165. This clearly indicates no problem of multicollinearity in the variables.

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Table 4

Result of Multicollinearity Test

<table>
<thead>
<tr>
<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP</td>
<td>2.091</td>
<td>.478</td>
</tr>
<tr>
<td>ITP</td>
<td>4.516</td>
<td>.221</td>
</tr>
<tr>
<td>APP</td>
<td>2.269</td>
<td>.441</td>
</tr>
<tr>
<td>CCC</td>
<td>6.846</td>
<td>.106</td>
</tr>
<tr>
<td>CATAR</td>
<td>3.869</td>
<td>.258</td>
</tr>
<tr>
<td>CLTAR</td>
<td>5.512</td>
<td>.181</td>
</tr>
<tr>
<td>CR</td>
<td>6.523</td>
<td>.153</td>
</tr>
<tr>
<td>SZ</td>
<td>1.690</td>
<td>.592</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>4.165</strong></td>
<td><strong>.304</strong></td>
</tr>
</tbody>
</table>


3.4. Regression and Discussion

Regression results using pooled ordinary least squares (OLS) technique for each of the four models are disclosed in Table 5. F-statistic values for the four models are significant at 1% level (prob value = 0.000). It depicts that each of the models as a whole is fit. With Durbin-Watson values of 1.159; 1.131; 1.160 and 1.192 for models 1, 2, 3 and 4, respectively are within the acceptable threshold of 1 to 3 (Gujarati, 2003, Asaeed, 2005 and Gujarati and Porter, 2009) shows that the model has no serial autocorrelation issues.

In model 1 (Average collection period, ACP as independent variable and proxy of working capital management practice), the OLS regression result indicates that ACP has an inverse effect on profitability (ROA) and is significant at 1% level. It suggests that the higher the period of collection of amount outstanding, the lower the profit. This outcome is in agreement with the study’s *apriori* expectation and is also supported by the works of Abdullah (2014), Pais and Gama (2015), Konak and Guner (2016), Lyngstadas and Berg (2016), Zariyawati, Hirnissa and Diana-Rose (2017) and Yunos, *et al.*, (2018). The null hypothesis 1 is hereby rejected. Thus, average collection period is an important factor that affects profitability of firms in Nigeria.
Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-3.423*** (0.001)</td>
<td>-2.861*** (0.004)</td>
<td>-3.697*** (0.000)</td>
<td>-2.625*** (0.009)</td>
</tr>
<tr>
<td>ACP</td>
<td>-2.733*** (0.007)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITP</td>
<td>-2.417** (0.017)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APP</td>
<td>0.381 (0.703)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CCC</td>
<td>-3.612*** (0.000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CATAR</td>
<td>4.802*** (0.000)</td>
<td>4.738*** (0.000)</td>
<td>4.941*** (0.000)</td>
<td>4.396*** (0.000)</td>
</tr>
<tr>
<td>CLTAR</td>
<td>-4.565*** (0.000)</td>
<td>-5.170*** (0.000)</td>
<td>-5.105*** (0.000)</td>
<td>-4.511*** (0.000)</td>
</tr>
<tr>
<td>CR</td>
<td>-1.017 (0.311)</td>
<td>-1.218 (0.225)</td>
<td>-1.358 (0.176)</td>
<td>-0.101 (0.920)</td>
</tr>
<tr>
<td>FSZ</td>
<td>5.582*** (0.000)</td>
<td>4.977*** (0.000)</td>
<td>5.936*** (0.000)</td>
<td>4.375*** (0.000)</td>
</tr>
<tr>
<td>R²</td>
<td>0.385</td>
<td>0.361</td>
<td>0.358</td>
<td>0.404</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.367</td>
<td>0.342</td>
<td>0.340</td>
<td>0.366</td>
</tr>
<tr>
<td>F-stat</td>
<td>21.170***</td>
<td>19.073***</td>
<td>18.889***</td>
<td>22.908***</td>
</tr>
<tr>
<td>Prob (F-stat)</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.159</td>
<td>1.131</td>
<td>1.160</td>
<td>1.192</td>
</tr>
<tr>
<td>Observations</td>
<td>175</td>
<td>175</td>
<td>175</td>
<td>175</td>
</tr>
</tbody>
</table>

*, **, *** represent significant at 10%, 5% and 1%, respectively.

Source: Authors’ computation (2018).

For model 2 (inventory turnover period, ITP as a proxy of working capital management practice), the regression result shows that ITP has a negative and significant relationship with profitability (ROA) at 5% level. It suggests high inventories level impact negatively on profitability because of the capital that is unduly tied up. The finding is in accordance with the *apriori* expectation. Some prior empirical studies (see Shubita, 2013, Almazari, 2014, Rezaei and Pourali, 2015, Zariyawati, *et al*. 2017) and Yunos, *et al*. 2018) supported this outcome. The null hypothesis 2 is rejected. Thus, inventory turnover is an important component of working capital management which affects profitability in Nigeria.
Regarding model 3 (average payment period, APP as a proxy of working capital management practice), regression output reveals that APP has a direct and insignificant influence on profitability (ROA). Although, the positive signal of the beta coefficient of the variable is in line with the *apriori* expectation, but it is not significant. The finding is in agreement with studies conducted by Owolabi and Alu (2012), Akoto, *et al.* (2013), Shubita, (2013), Osundina (2014) and Hassan, Imran, Amjad and Hussain (2014), while it was against the outcome of the studies of Agha (2014), Abdullah (2014) and Rezaei and Pourali (2015), that produced positive and significant relationship. The null hypothesis 3 is hereby failed to be rejected. Thus, average payable period is not an important component of working capital management that influences profitability of Nigerian firms.

Lastly, in model 4 (cash conversion cycle, CCC as a proxy of working capital management practice), the regression result provides evidence of an indirect and significant association between CCC and ROA at 1% level. This suggests that profitability can only be enhanced if efforts are made at reducing the time lag between the period purchases were made and cash received from goods sold. The outcome is in accordance with *apriori* expectation and follows the prediction of working capital aggressive policy. Empirical evidences in support of this outcome are from the works of Zakaria and Amin (2013), Panigrahi (2014), Rezaei and Pourali, (2015), Konak and Guner (2016), Bhatia and Srivastava (2016) and Zariyawati, *et al.* (2017). The null hypothesis 4 is hereby rejected. Thus, cash conversion cycle is an important predictor that drives profitability of Nigerian firms.

The signals of three control variables (CATAR, CLTAR and SZ) for each of the models are as predicted. CATAR and FSZ are positively related to ROA at 1% level, while CLTAR is indirectly related to ROA at 1% level. However, CR produces a negative but insignificant association with ROA.

### 3.5. Robustness check

In order to validate the result of pooled OLS technique which confirmed that CCC has inverse influence on profitability (see Table 5), two other analytical techniques mostly used in the literature, Fixed effects least squares (FELS) and Random effects generalised least squares (REGLS) regressions were conducted. The result is depicted in Table 6.

The summary of Hausman (1978) specification test indicates Chi square value of 1.822 and prob value of 0.873 (p > 0.05), thereby supporting REGLS technique for valid inference. Although, the results of both models (FELS and REGLS are similar), inference is made using REGLS. Adjusted R² is 57.7%. F-stat value is 9.177, which is
significant at 1% level \( (p < 0.01) \) and Durbin-Watson value of 1.293 (which is within acceptable threshold). All these indicate that the model as a whole is fit and has little or no presence of serial autocorrelation that can affect significantly the inference to be made from the regression output.

### Table 6

<table>
<thead>
<tr>
<th>Variable</th>
<th>Fixed effects</th>
<th>Random effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>(-0.029) (0.977)</td>
<td>(0.331) (0.742)</td>
</tr>
<tr>
<td>CCC</td>
<td>(-1.786^*) (0.076)</td>
<td>(-1.771^*) (0.079)</td>
</tr>
<tr>
<td>CATAR</td>
<td>(3.310^{***}) (0.001)</td>
<td>(3.056^{***}) (0.008)</td>
</tr>
<tr>
<td>CLTAR</td>
<td>(-2.881^{***}) (0.005)</td>
<td>(-2.701^{***}) (0.008)</td>
</tr>
<tr>
<td>CR</td>
<td>(-0.219) (0.827)</td>
<td>(-0.102) (0.919)</td>
</tr>
<tr>
<td>FSZ</td>
<td>(0.245) (0.807)</td>
<td>(-0.152) (0.879)</td>
</tr>
<tr>
<td>(R^2)</td>
<td>0.644</td>
<td>0.647</td>
</tr>
<tr>
<td>Adjusted (R^2)</td>
<td>0.573</td>
<td>0.577</td>
</tr>
<tr>
<td>F-stat</td>
<td>(9.058^{***})</td>
<td>(9.177^{***})</td>
</tr>
<tr>
<td>Prob (F-stat)</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.306</td>
<td>1.293</td>
</tr>
<tr>
<td>Hausman Chi square</td>
<td>1.822</td>
<td></td>
</tr>
<tr>
<td>Prob (Hausman)</td>
<td>0.873</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>175</td>
<td>175</td>
</tr>
</tbody>
</table>

*, **, *** represent significant at 10%, 5% and 1% respectively.

Source: Authors’ computation (2018).

As reported in Table 6, CCC (the most prominent measure of working capital management) has a negative and significant effect on profitability (ROA) at 10% level. This outcome empirically validates the result as produced by the main analytical tool (pooled OLS) used in the study.
4. Conclusion and Recommendations

The effect of working capital management practices on profitability of 25 Nigerian listed non-financial companies in five sectors was investigated. Empirical findings revealed a negative and significant effect of average collection period, inventory turnover and cash conversion cycle on profitability, ROA.

In line with empirical findings, it is recommended that corporate managers should take necessary steps in planning, controlling and managing every component part of working capital management practices (accounts payable, inventory turnover, accounts payable and cash conversion cycle). It is only when the components parts are allowed to operate at optimum level that enhancement of a company’s profitability and maximization of shareholders wealth will be achieved.

In order to achieve a more robust study than what is presented in this study, future researches can be conducted in other sectors, such as financial services and small- and- medium-sized companies. The possibility of increasing the sample size and time frame should also be taken into cognizance.

References


CULTURAL CATALYSTS OF INCLUSIVE GROWTH IN THE EUROPEAN UNION – A CAUSAL PERSPECTIVE

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JEL A120, A130, F550, O430

Abstract

Anchored in the complex European economic integration context, this paper aims at investigating the connections between national cultural dimensions and inclusive growth, having the express objective of identifying those cultural dimensions that exert a potential causal influence on the chosen dependent variable and to generate relevant conclusions that may serve as inputs in the process of public policy design and implementation. Employing a quantitative methodological approach, the study uses data resulting from two cultural models (one the result of the research of Hofstede and his collaborators and the other one the result of the research of Schwartz) and the World Economic Forum’s Inclusive Growth and Development Report 2017, finding evidence supporting a potential causal effect of the Hofstedian cultural dimension of indulgence, while discarding the hypotheses related to the relationships between inclusive growth and the other national cultural dimensions pertaining to the two considered models. This result is important especially in the context of ensuring culturally adapted public policy design and implementation processes, that would increase policy effectiveness and efficiency.

Keywords: inclusive growth, cultural dimensions, culturally adapted public policies, European integration.

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Introduction and Methodology

Recognizing the advantages of culturally adapted public policies and their enhanced function for the European integration process, this paper investigates the connections between national culture and inclusive growth, one of the key components of economic integration. The express objective of the study is to identify
those national cultural dimensions that exert a causal influence on the chosen dependent variable and to generate relevant conclusions that may serve as inputs in the process of public policy design and implementation.

Generating economic growth is perhaps the one of the prevalent objectives of the majority of the world’s governments. However, the concept of growth can prove to be more complex than deemed at a first glance, as it transcends the simple mathematical perspective of merely achieving a higher level of output than in the previous period. The subject has been constantly central to economic thought dating back to ancient Mesopotamia (Kurz and Salvadori, 2018), receiving extended attention by classical economists like Adam Smith or David Ricardo in the 18th and 19th centuries. Today, the topic is omnipresent in both academic literature and political debate. Recognizing that it is not the goal of this paper to provide with a comprehensive review of the complex current climate of growth theories and practices, we focus instead on the inclusive character of growth, i.e., a perspective from the point of view of the impact that growth policies have on the various segments, pursuing the fair distribution of opportunities and benefits of economic development to all segments of individuals and social groups (Boarini et al., 2014; Darvas and Wolff, 2016, p. 1). As Acemoglu (2007, p. 10) argues, “economic growth is generally good for welfare, but it often creates winners and losers”, a conclusion that comes in an environment characterized by the growing recognition that achieving economic growth does not necessarily mean that equal opportunities are provided to different segments of society and that economic growth lacking an inclusive character could be unsustainable (Darvas and Wolff, 2016, p. 9).

Acknowledging the need for a systematic framework to guide the design and implementation of public policies with the aim of generating inclusive growth, the World Economic Forum’s team of researchers has analyzed, from a comparative perspective, the nature of growth and development in 109 countries, taking into account both historical accumulations and the dynamics of the previous five years. The result of this scientific approach by Samans et al. (2017) is the publication of a complex report centered on the phenomenon of inclusive growth and development that, mainly due to the measurement of the performance of the considered states and their inclusion in a ranking, constitutes a highly useful tool for deepening the research in the field.

Relying on the results of this study, we aim to explore the links between inclusive growth and development and national cultural dimensions as defined and measured within two different models, one developed by Hofstede and his collaborators (Hofstede, 1980a, 1980b, 2001, 2010; Hofstede, Hofstede and Minkov, 2011), and the
other one by Schwartz (1999, 2006). In order to achieve this, the paper takes a quantitative approach by identifying the causal links between the variables (with national cultural dimensions as independent variables and the inclusive growth score as a dependent one), arguing that the results are highly relevant in the context of the design and implementation process of culturally adapted, more effective and efficient, public policies.

The paper is deliberately limited to analyzing the cultural-growth relation in EU member states, a choice that brings the methodological advantage of having data from countries that are relatively homogenous (compared to the whole set of world economies) regarding democracy, institutional design and, to a lesser extent, economic development, a situation that facilitates restricting the interference that these variables could exert on inclusive growth and, consequently, the potential of identifying false causal relations.

In our quest for causality, we depart from the understanding of Gerring (2015), who sees the concept from the perspective of the principles of Bayesian inference, which imply that an element constitutes a cause of a given event if it increases the probability of that event occurring. Methodologically, the paper adheres to epistemological rigors that require a double condition to be met in order to identify causal links and tests for both magnitude effects (more precisely, the Pearson correlation between variables) and the probabilistic elements specific to the regression analysis (Fidler 2010), more precisely by performing ordinary least squares (OLS) regressions and setting two relevant statistical confidence levels of the independent’s variable p-value at $p = 0.01$ and $p = 0.05$. Similar methodological approaches are employed in other papers exploring the connection between cultural characteristics and various socio-economic indicators, with Richardson (2008), Seleim & Bontis (2009), Réthi (2012) and Dan (2018) to name a few.

As a final introductory remark, we would like to mention that, for the ease of expression, in the remainder of the paper we will simplify the terminology and will refer to inclusive growth and development using the term of "inclusive growth".

1. A View on National Culture – Elaborating on the Constituent Cultural Elements of the Analysis

Reliable and accurate data on national cultural dimensions is central to the undertaken research, as the quality of the cultural inputs of the analysis determine the validity of its conclusions. Consequently, we use the results of two widely (even if not unanimously) accepted and highly cited cultural models: one developed by Hofstede and his collaborators and the other by Schwartz.
The former, which is perhaps the most visible cultural model of this kind, is the result of the research of Dutch sociologist Geert Hofstede and his collaborators (Hofstede, 1980a, 1980b, 2001, 2010; Hofstede, Hofstede and Minkov, 2011) and has the merit of quantifying cultural dimensions on a national level, thus allowing the comparative analysis of country-specific cultural features (Hofstede, 2011, p. 5) and providing with a valuable tool for understanding how cultural elements influence different socio-economic outcomes, including inclusive growth. More precisely, the model defines and measures six cultural dimensions, as outlined in Hofstede (2011):

1. power distance, that measures the extent to which less powerful members of society accept (or even expect) an uneven distribution of power within the group;
2. uncertainty avoidance, that measures the degree of tolerance to ambiguity and the unknown;
3. the individualism vs. collectivism dimensional continuum, that measures the extent to which members of society are integrated into groups;
4. the masculinity vs. femininity dimensional continuum, that measures the positioning of a particular culture along a spectrum with two extremes: one made out of so-called masculine values (such as competition, ambition, or the link between success and material rewards) and the other made out of so-called feminine values (among which cooperation, modesty and emphasis on the quality of life);
5. the long-term orientation vs. short-term orientation dimensional continuum, that has at its roots the society level interaction between perspectives, objectives and expectations at various time intervals. More precisely, a society with a long-term orientation is focused on the future, while a short-term oriented society puts more emphasis on the near future, the present or even the past;
6. the indulgence vs. restraint dimensional continuum, a dimension that depicts the distinction between the inclination for indulgence, which "stands for a society that allows relatively free gratification of basic and natural human desires related to enjoying life and having fun" (Hofstede, 2011, p. 15), and the inclination for restraint, which "stands for a society that controls gratification of needs and regulates it by means of strict social norms" (Hofstede, 2011, p. 15).

The other used model is the outcome of the research of Schwartz (1999, 2006), that results in the identification and measurement of seven types of values distributed along three dimensions, permitting, as in the case of the Hofstede model, intercultural comparative analysis:

1. the values that govern the relationship with the group and lead to the valorization of the individual’s own independent existence, namely intellectual autonomy (referring to the desire of individuals to pursue their own ideas and intellectual direc-
tions) and affective autonomy (referring to positive affective experiences such as pleasure or an interesting and varied life), and are dimensionally contrasted by the conservative values of inclusion, which favor the maintenance of the status quo, the traditional order and the solidarity of the group;

2. the values that regulate social interactions and interdependencies, ranging from the prevalence of hierarchical relations that legitimize the unequal distribution of power, roles and resources, to an egalitarian approach centered around the acknowledgement of the moral equality of all members of society, the adherence to a set of values that include equality, social justice, freedom, honesty and responsibility and that is instrumental to the commitment to promote the welfare of others (Schwartz, 1999);

3. the values characterizing how societies view the interaction between humanity and the natural and social environment, an interaction that can either be leaning towards mastery and the intrinsic belief that an active assertive attitude is better suited to ensure success, or, on the contrary, can be governed by harmony, with unity with nature, protection of the environment and recognition of a world of beauty as main ingredients (Schwartz, 1999).

Having outlined the structure of the cultural models that provide with the necessary data that allow the conduction of the research, the following sections are dedicated to the description of the performed causal investigation of the influences of culture on the inclusive nature of economic growth.

2. Hofstede’s Cultural Dimensions and Inclusive Growth – Searching for Causality

In order to comply with both epistemological requirements as prescribed by Fidler (2010), namely the probabilistic elements stemming out of the regression analysis and the size effect (given by the correlation levels between variables), we will employ a two-step quantitative analysis in order to identify causal links between national cultural dimensions (as defined and measured within two different models, one developed by Hofstede and his associates and the other by Schwartz).

Consequently, first we will use the regression analysis tool to verify if the first causality condition is fulfilled, seeking to identify those pairs of variables that, in addition to a relevant value of the size effect, are in a relationship that is characterized by p values smaller than 0.05 (first level of confidence) or 0.01 (second level of confidence). In this regard, we define below the form of the regression equation and detail, in tabular form, the characteristic elements of the ordinary least squares regression.
\[ IG_i = \beta_0 + \beta_1 PD_i + \beta_2 UA_i + \beta_3 INDV_i + \beta_4 M_i + \beta_5 LTO_i + \beta_6 I_i + \varepsilon_i \]

where

- \( IG_i \) is the level of inclusive growth in country \( i \),
- \( \beta_0 \) is the constant,
- \( PD_i \) is the level of power distance in country \( i \),
- \( UA_i \) is the level of uncertainty avoidance in country \( i \),
- \( INDV_i \) is the level of individualism in country \( i \),
- \( M_i \) is the level of masculinity in country \( i \),
- \( LTO_i \) is the level of long term orientation in country \( i \),
- \( I_i \) is the level of indulgence in country \( i \),
- \( \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6 \) are the coefficients of each of the cultural dimensions,
- \( \varepsilon_i \) is the error of the regression.

Table 1 below describes the regression.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>PD</th>
<th>UA</th>
<th>INDV</th>
<th>M</th>
<th>LTO</th>
<th>I</th>
<th>Constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-0.0002</td>
<td>-0.0077</td>
<td>0.0003</td>
<td>-0.0009</td>
<td>0.0100</td>
<td>0.0115</td>
<td>4.2240</td>
</tr>
<tr>
<td>Standard error</td>
<td>0.0049</td>
<td>0.0046</td>
<td>0.0059</td>
<td>0.0031</td>
<td>0.0051</td>
<td>0.0050</td>
<td>0.6860</td>
</tr>
<tr>
<td>t stat</td>
<td>-0.0356</td>
<td>-1.6822</td>
<td>0.0581</td>
<td>-0.3030</td>
<td>1.9559</td>
<td>2.2916</td>
<td>6.1572</td>
</tr>
<tr>
<td>P value</td>
<td>0.9720</td>
<td>0.1089</td>
<td>0.9543</td>
<td>0.7652</td>
<td>0.0653</td>
<td>0.0335</td>
<td>0.0000</td>
</tr>
<tr>
<td>P value for F</td>
<td>0.0127</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.5409</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table 1**

The influence of Schwartz’s cultural dimensions on inclusive growth – the description of the OLS regression

Source: Own calculations based in data from Samans et al. (2017) Hofstede (2001) and Hofstede, Hofstede and Minkov (2010) (the last two resources were accessed through the Hofstede Centre).

The data resulting from the OLS regression analysis indicates the existence of \( p \) values that are relevant in the context of a causal relationship only in the case of indulgence (as independent variable), with a \( p \) value of 0.0335. This indicates however just a possibility of causality, as the second condition pertaining to the size effect needs to hold in order to validate the hypothesis. Consequently, we proceed by
evaluating the correlation level between Hofstede’s cultural dimensions and data provided by the Inclusive Growth Index from 26 EU Member States (with Cyprus and Malta missing due to lack of data) in accordance with the recommendations of Zady (2000) and Asuero, Sayago & Gonzalez (2006), considering the values between 0.9 and 1 as corresponding to a very high correlation, between 0.7 and 0.89 to a high one and between 0.5 and 0.69 to a moderate one, classifications that are similar to those proposed by Taylor (1999). Levels below 0.5 will not be considered as relevant. The results of this analysis are summarized in Table 2.

**Table 2**

<table>
<thead>
<tr>
<th>Cultural dimension (Hofstede)</th>
<th>Correlation with the inclusive growth index value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD</td>
<td>-0.45</td>
</tr>
<tr>
<td>UA</td>
<td>-0.59</td>
</tr>
<tr>
<td>INDV</td>
<td>0.48</td>
</tr>
<tr>
<td>M</td>
<td>-0.12</td>
</tr>
<tr>
<td>LTO</td>
<td>0.15</td>
</tr>
<tr>
<td>I</td>
<td>0.53</td>
</tr>
</tbody>
</table>

*Source: Own calculations based on data from Samans et al. (2017), Hofstede (2001) and Hofstede, Hofstede and Minkov (2010) (the last two resources were accessed through the Hofstede Centre).*

As can be seen from the data presented, with respect to Hofstede’s dimensions, only the cultural dimensions of uncertainty avoidance and indulgence display association values with the inclusive growth index that can be considered as relevant (more precisely, a negative association coefficient $r = -0.59$ and a positive association coefficient $r = 0.53$, respectively).

Evaluating these results in accordance with the double condition described at the beginning of the study, only the hypothesis referring to the existence of an influence induced on inclusive growth by the cultural dimension of indulgence is validated, while the relationship between the cultural dimension of uncertainty avoidance and the dependent variable is infirmed, despite the previously reported $r = -0.59$ correlation level.

These results reinforce the perception of the importance of the cultural dimension of indulgence that has emerged from other investigations (Dan, 2015,
2017, 2018), indicating the necessity of taking this cultural feature into account in the process of public policy design and implementation.

The graphical representation depicting the positioning of Member States according to their indulgence and inclusive growth scores is illustrated in Chart 1, along with the trend line equation and the coefficient of determination for each pair of observations.

Source: Own graphical depiction based on data from Samans et al. (2017), Hofstede (2001) and Hofstede, Hofstede and Minkov (2010) (the last two resources were accessed through the Hofstede Centre).

Chart 1. The inclusive growth index and the cultural dimension of indulgence in EU Member States

In the following section, we will focus the analysis of potential links between the cultural dimensions as defined and measured by Schwartz (1999, 2006) and the values of the inclusive growth index (Samans et al., 2017).
3. Inclusive Growth and Schwartz’s Cultural Dimensions – Searching for Causality

Following the same methodology as before, more precisely aiming at identifying the pairs of variables which fulfill the double condition for determining the causal nature of a relationship, the following section focuses on investigating potential causal relations between the values of Schwartz’s cultural dimensions in 24 Member States of the European Union \(^1\) (as an independent variable) and the inclusive growth index, as measured by Samans el al. (2017) in the "The 2017 Growth and Development Report" developed under the umbrella of the World Economic Forum (as a dependent variable).

Again, the first step consists in performing the regression analysis in order to identify the required probabilistic elements (p-values that are within the considered confidence intervals).

Consequently, we define a regression equation with the following form:

\[
IG_i = \beta_0 + \beta_1 EMB_i + \beta_2 AFA_i + \beta_3 INA_i + \beta_4 M_i + \beta_5 HAR_i + \beta_6 HIE_i + \beta_7 EG_i + \epsilon_i
\]

where

- \(IG_i\) is the level of inclusive growth in country \(i\),
- \(\beta_0\) is the constant,
- \(EMB_i\) is the level of embeddedness in country \(i\),
- \(AFA_i\) is the level of affective autonomy in country \(i\),
- \(INA_i\) is the level of intellectual autonomy in country \(i\),
- \(M_i\) is the level of mastery in country \(i\),
- \(HAR_i\) is the level of harmony in country \(i\),
- \(HIE_i\) is the level of hierarchy in country \(i\),
- \(EG_i\) is the level of egalitarianism in country \(i\),
- \(\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7\) are the coefficients pertaining to each of the cultural dimensions,
- \(\epsilon_i\) is the error of the regression.

The characteristics of the regression attributed to the above equation are described in the table below:
Table 3

The influence of Schwartz’s cultural dimensions on inclusive growth – the description of the OLS regression

<table>
<thead>
<tr>
<th></th>
<th>EMB</th>
<th>AFA</th>
<th>INA</th>
<th>M</th>
<th>HAR</th>
<th>HIE</th>
<th>EG</th>
<th>constant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>-1.2140</td>
<td>0.0398</td>
<td>-0.0050</td>
<td>-1.5067</td>
<td>-1.0431</td>
<td>-0.3719</td>
<td>-0.7331</td>
<td>23.3415</td>
</tr>
<tr>
<td>Standard error</td>
<td>0.5596</td>
<td>0.3139</td>
<td>0.4227</td>
<td>0.5362</td>
<td>0.4288</td>
<td>0.3385</td>
<td>0.3493</td>
<td>5.8045</td>
</tr>
<tr>
<td>t stat</td>
<td>-2.1694</td>
<td>0.1267</td>
<td>-0.0119</td>
<td>-2.8100</td>
<td>-2.4324</td>
<td>-1.0988</td>
<td>-2.0989</td>
<td>4.0212</td>
</tr>
<tr>
<td>P value</td>
<td>0.0455</td>
<td>0.9008</td>
<td>0.9907</td>
<td>0.0126</td>
<td>0.0271</td>
<td>0.2881</td>
<td>0.0521</td>
<td>0.0010</td>
</tr>
<tr>
<td>P value for F</td>
<td>0.0059</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td></td>
<td>0.6642</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Own calculations based in data from Samans et al. (2017) and Schwartz (1999, 2006).

It can be observed that the OLS regression analysis indicates p values situated within the required confidence intervals for three cultural dimensions, i.e. embeddedness ($p=0.0455$), mastery ($p=0.0126$) and harmony ($p=0.0271$). However, these results need to be verified by checking the fulfillment of the second criterion, namely the effect of size stemming from the correlation analysis. The results are summarized in Table 4.

Table 4

Correlations between Schwartz’s cultural dimensions and the values of the inclusive growth index

<table>
<thead>
<tr>
<th>Cultural dimension (Schwartz)</th>
<th>Correlation with the inclusive growth index value</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMB</td>
<td>-0.45</td>
</tr>
<tr>
<td>AFA</td>
<td>0.47</td>
</tr>
<tr>
<td>INA</td>
<td>0.44</td>
</tr>
<tr>
<td>M</td>
<td>-0.42</td>
</tr>
<tr>
<td>HAR</td>
<td>-0.12</td>
</tr>
<tr>
<td>HIE</td>
<td>-0.14</td>
</tr>
<tr>
<td>EG</td>
<td>0.10</td>
</tr>
</tbody>
</table>

Source: Own calculations based in data from Samans et al. (2017) and Schwartz (1999, 2006).
The results of the correlation analysis reveal that none of the cultural dimensions proposed by the Schwartz model are associated with the inclusive growth index at a level of intensity that is sufficient for it to be considered relevant and, as a consequence, the causal relationship hypotheses is invalidated due to the non-fulfillment of at least one of the conditions required by the employed methodology.

Conclusion

Employing a quantitative methodological approach, the study used data resulting from two cultural models (one the result of the research of Hofstede and his collaborators and the other one the result of the research of Schwartz) and the World Economic Forum’s “Inclusive Growth and Development Report 2017” with the express objective of identifying those cultural dimensions that exert a causal influence on the chosen dependent variable and to generate relevant conclusions that may serve as inputs in the process of public policy design and implementation. To this purpose, the methodology required the fulfillment of a double condition by testing for both size effects (more precisely, the Pearson correlation between variables) and the probabilistic elements specific to the regression analysis (Fidler 2010), more precisely by performing ordinary least squares (OLS) regressions and setting two relevant statistical confidence levels of the independent’s variable p-value at p = 0.01 and p = 0.05.

The results of the analysis reveal evidence leading to the conclusion of the presence of a potential causal effect on inclusive growth exerted by the Hofstedian cultural dimension of indulgence, while none of Hofstede’s other cultural dimensions and none of the cultural dimensions proposed by the Schwartz model met the conditions necessary to indicate causality.

This result is important especially in the context of public policy design and implementation, as evidence suggests that national culture plays a significant role in shaping public policy (Daniell, 2014) and thus a culturally adapted policy process would have a positive impact on the efficiency and effectiveness of the policies in question. Moreover, in the general context in which the cultural dimension of the European Union construction has lately generated increased interest (Ciceo, 2016), achieving a deeper comprehension of the ways in which cultural elements influence the economic and social vectors of inclusive growth, including drivers such as social entrepreneurship as described by Racolța-Paina (2018) or the national managerial culture behind the implementation of EU-funded projects as analyzed by Păun and Corpădean (2018), could prove to be highly beneficial from various perspectives ranging from economic to politic.
End Notes

Cyprus, Lithuania, Luxembourg and Malta are not included due to the lack of available data in the considered sources.

References


FACTORING AS AN INTEGRAL PART OF OPERATIONAL AND STRATEGIC CONTROLLING

Thomas HENTSCHEL

Abstract

The automobile trade is subject to a strong concentration process, where the profit margins are low whereas the requirements by the manufacturer, market and customers are high. To survive, extreme cost discipline and a healthy financing structure are required. Factoring in combination with a powerful operative and strategic controlling are decisive factors. Lean processes and optimal use of personnel costs have led to a positive result. Dealer surveys with a qualified questionnaire on the use of controlling in the company and the organizational structure served as a basis. In addition, the dealer management report for Volkswagen Germany was used to compare the individual personal assessment of the company with the results of the nationwide dealers depending on their size. The earnings situation of the dealers is very tense, especially in new car sales, due to low margins and a strong margin reduction in competition. Factoring can be used to relax the financial situation and avoid liquidity bottlenecks.

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Introduction

There are no instruments available in the motor vehicle trade which reflect external and internal factors of purchase influence in advance.

Future developments which are to be analyzed by means of strategic sales controlling in order to be able to initiate timely adjustment measures have not yet been realized in the motor vehicle trade (Diez, Brachat, 2001). On the one hand, this is due to the employees' lack of know-how, on the other hand to information deficits on the part of customers and environmental influences.
There are no IT solutions in use in the automotive trade which collect information in a structured way, aggregate it and thus point out trends and approaches to solutions.

Increasing competitive pressure, rising cost pressure, increasing assortment width are factors, which must be mastered. Here a powerful trade controlling and trade marketing is necessary, on the one hand in the operational interpretation, on the other hand in the strategic thrust (Becker, 2001).

Companies operate in heterogeneous markets, products are becoming more and more interchangeable and customers demand problem solutions beyond the product, consulting in the application of technology. Selling hardware (products) is no longer enough. There is an increasing demand for software and orgware.

Companies are getting bigger and bigger and mergers of the past few years are proof of that. The pressure to delegate responsibility, to decentralize (divisional organization, profit center) is increasing (Lehmann, 1998).

Characteristics of a relentless competition are not only the "takeovers" of the last years. Competitors immediately exploit weaknesses of their competitors. Maintaining customer loyalty requires new techniques in external communication.

Corporate policy decisions such as location issues, investments or advertising statements are influenced by public opinion.

For controlling instrumentation, this pressure on the increasing need for coordination means that the operational success factors must be identified and depending on the problem and question, linked to the decision-making process. This "chaining" of different decision criteria is usually critical. Quick action is required. Today "it is not simply the big that eats the small, but the fast that eats the slow".

"Leading market positions are won by the fact that the enterprise binds its customers by product innovations and product improvements, product quality and customer services to itself and wins new customers. If this is not the case, so much advertising, sales promotion and salesmanship will not be successful in the long run."

Factoring can be seen as an innovative tool for improving liquidity and rating while simultaneously increasing the equity ratio.

Factoring enables stabilization of customer and supplier relationship, through the positive influence a faster growth can be financed.

The legal construct of factoring must be chosen in such a way that other assignments of receivables do not conflict (Mevissen, 2005).
1. Introduction to sales controlling, factoring and its problems

With increasing product similarity, competitive pressure in the automotive trade is also increasing. High costs for market processing and advance services increase distribution costs (Dudenhöffer, 1998).

Since the automobile trade is increasingly orientated towards individualized customer wishes, exogenous factors (e.g. changing customer wishes, economic situation, purchasing behavior, market awareness etc.) play a greater role on the one hand, and on the other the necessary reaction times to changes in the environment are even shorter in comparison to production companies.

The task of sales controlling is therefore to correctly assess both current and expected future developments and thereby enable the company management to initiate appropriate adjustment measures in good time.

The following table briefly describes the necessity of trade controlling and the possible measures for marketing based on Becker (Becker, 2001):

**Increasing competitive pressure**
- increasing turnover and company concentration
- expansion of sales area with simultaneous increase in cost pressure
- increasing product range

**Location as an influencing factor**
- The result of individual stores/sites is directly dependent upon:
  - competition at the location
  - distance to the customer
  - regional purchasing power
  - competitive price level
  - assortment or offer structure

- The width and depth of the assortment have a direct influence on the processing information quantity as well as on the specific design of the controlling system;

- Depending on the location, information about specific customer structures is provided in order to support the design of the offer.

To be able to orientate as precisely as possible to the target group.

The meaning and purpose of controlling, or in other words: The following graphic (Fig. 1) will additionally explain why controlling is required:
Sense and Purpose of Controlling

- heterogeneous Markets 1
- growing company size 2
- implementation speed
- growing socio-political decisions – influences 4
- relentless competition 3
- corporate culture MBO

management style suitable for controlling controlling function of the manager

**Fig. 1. Sense and Purpose of Controlling (own presentation)**

The points set out in the graph are to be defined in the following paragraph:

1. Companies are operating in heterogeneous markets, products are being more and more interchangeable, customers demand more than the product itself problem solving, consulting in the application of technology. Hardware (products) is no longer sufficient. Increasingly, not only software but orgware is required.
2. Companies are getting bigger and bigger, witnessed by mergers in the sector of recent years.

The pressure on the delegation of responsibility for decentralization (divisional organization, profit and loss management) profit center) is increasing.

3. Characteristics of a ruthless competition are not only the "takeovers" of recent years. Competitors are quick to exploit the weaknesses of their rivals’ customer loyalty. Maintaining customer loyalty calls for new techniques in external communication.

4. Corporate policy decisions such as location issues, investments, etc., or advertising messages are influenced by public opinion.

For controlling instrumentation, this pressure on the increasing need for coordination implies that the operational success factors must be identified and, depending on the problem in question, linked to the decision-making process. This "concatenation" of different decision criteria is usually critical. Therefore, a quick need for action is called for.

Today "it is not simply the big that eats the small, but the fast that eats the slow". This means that being big in terms of personnel strength, financial strength and sales is not enough. The ability to adapt to new market conditions is crucial, which is why the speed of adaptation is a relevant, if not the decisive factor for the future. Large units are cumbersome in decision-making and implementation.

The automobile trade has to recognize and grasp these changes quickly and ongoing adjustments, also of a legal nature, need to be taken into account immediately.

The new Block Exemption Regulation (BER) came into force in mid-1995. Some manufacturers' networks (Diez, Hentschel, 1996) are drastically overstaffed and will have to be thinned out accordingly in the coming years. It is up to the manufacturers themselves to decide which concepts are to be applied; new performance-based margin systems can be the first step.

This means that only a car dealership with the right operative and strategic decisions and targeted information could be able to master the future. These changes make a meaningful controlling system necessary.

Factoring as a credit substitute from the point of view of improving liquidity and optimizing the equity ratio as a strategic success factor, says Stocker (2009). As a result, an improved rating and a lean balance sheet structure can be achieved. From this it can be deduced that sales, controlling and factoring are closely related, since both elements require fundamental considerations with regard to customer structure, payment behavior and previous behavior towards customers.

Functionally, factoring is examined as:

A. Financing function
B. Service function
C. Credit insurance function
Use in the company as real and fake factoring
What recommendations are there for retailers of different sizes with regard to sales controlling and factoring and what opportunities are there for smaller retailers, what can large chain companies realize and implement with regard to strategic orientation, following solution approaches.

A quote from Kotler / Bliemel (Kotler, Bliemel, 1992) clearly expresses this once again:

"Leading market positions are won by the fact that the enterprise binds its customers by product innovations and product improvements, product quality and customer services to itself and wins new customers. If this is lacking, so much advertising, sales promotion and salesmanship will not bring success in the long run."

2. Factoring as an innovation tool for the automotive trade

Automobile dealerships were surveyed extensively and the information compared with the central dealer management report Volkswagen Germany. Corresponding conclusions were drawn from this and used for the factoring thesis. "Factoring refers to the continuous sale of short-term money claims against third-party debtors to a factoring company (factor) (Werner, Kobabe, 2007: 219ff). Depending on their nature, various functions and services can be integrated.

The basic features of factoring have their origins in the historical antiquity of pre-Christian times. Even Romans and Babylonians, in the course of their networks and trading activities, apparently bought and sold receivables from deliveries and services and were able to conduct business nationwide and expand their businesses. In the aftermath of numerous inventions and ingenious knowledge, factoring was also forgotten for several centuries, until finally in the Middle Ages, trade with all its facets began to flourish again and expand. Well-known families such as Fugger and Welser built up an exemplary, unbelievable network of international trade routes and bases.

It has been proven that this expansion was only possible through a well maintained personal relationship network and through the reliable use of various financing instruments - including factoring. Even business in then vast and dangerous regions, such as America, could only be transacted via a factor used locally to manage the trading houses. The main task of the factor at that time was to take delivery of the delivered goods, to enter them in the books and to store them. Another subsequent task was to find buyers, deliver the goods and process the payment. The factoring
business offered fertile, virgin soil for commercial agents at that time (Singh 2010: 2ff).

In 1890, the introduction of the McKinley customs tariff brought about a radical change. These political changes, as well as further development of the means of communication and transport, replaced the factoring business in its original form, but promoted the development and introduction of financing factoring coupled with bad debt protection as a demand-oriented evolution of factoring (Singh 2010: 4ff).

However, factoring was rediscovered and further optimized with countless variants and possibilities in the 20th century, being spread via the USA worldwide, and is now becoming increasingly well known internationally and at the same time gaining importance in the financing strategy of companies (Weidenkauff 2009: 2ff).

3. Empirical analysis of the economic key figures under the influence of factoring at VW dealerships

Overall, it can be evaluated that the contribution margin in the overall result of Volkswagen dealers has developed positively and increased significantly. This was due to a significant improvement in contribution margin III in the parts service and used car sales segments, while contribution margins III in the customer service and new car sales segments deteriorated. Direct operating costs were significantly reduced in all cost centers whereas personnel costs were only reduced in the sale of new vehicles.

Interestingly, personnel costs were increased in the after-sales service area despite declining profits. This resulted in the negative development of contribution margins II and III. It is possible that the costs for wage increases could not be recouped from the customer's profits or that it might be necessary to consider adjusting staff utilization. The direct operating costs could be significantly reduced in all areas.
Even though gross profit declined, cost reductions nevertheless resulted in a positive development of contribution margin III.

**Fig. 2. Analysis of percentage change in cost centers from 2007 - 2011**

<table>
<thead>
<tr>
<th></th>
<th>Gross Profit</th>
<th>Direct Costs</th>
<th>Contribution Margin I</th>
<th>Personnel Costs</th>
<th>Contribution Margin II</th>
<th>Direct Operating Costs</th>
<th>Contribution Margin III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Operation</td>
<td>-12</td>
<td>-9</td>
<td>-13</td>
<td>32</td>
<td>14</td>
<td>-31</td>
<td>39</td>
</tr>
<tr>
<td>Sale of New Vehicles</td>
<td>-12</td>
<td>-20</td>
<td>-9</td>
<td>-5</td>
<td>-11</td>
<td>-19</td>
<td>-7</td>
</tr>
<tr>
<td>Sale of Used Vehicles</td>
<td>18</td>
<td>-12</td>
<td>31</td>
<td>14</td>
<td>-11</td>
<td>-19</td>
<td>39</td>
</tr>
<tr>
<td>Parts Service</td>
<td>13</td>
<td>100</td>
<td>12</td>
<td>12</td>
<td>35</td>
<td>-23</td>
<td>40</td>
</tr>
<tr>
<td>After Sales Service</td>
<td>-21</td>
<td>0</td>
<td>21</td>
<td>35</td>
<td>-14</td>
<td>-33</td>
<td>-11</td>
</tr>
</tbody>
</table>
On the basis of this evaluation it is clearly visible that profit alone is not a decisive factor for success. Thus, it is quite possible that a significant increase in gross profit can be recorded, which, however, due to various cost factors does not reach the contribution margin III as a positive result.

Basically, there are several effective approaches that can lead to an improvement in the result. In the following, three selected possibilities are discussed which can be achieved via use of factoring. The use of factoring can significantly improve key figures such as leverage and the liquidity of the company. Accordingly, improvement of operating ratios is also possible by reducing total assets, increasing liquidity and thus improving ratings (Perridon, Steiner, Rathgeber, 2009).

Interest rate reduction and possible savings potential in accounting and dunning leads to a reduction in the direct costs incurred.

Loss of receivables can be minimized, thereby reducing the need for value adjustments, thus reducing the balance sheet total and increasing the equity ratio.

**Fig. 3. Gross profit and contribution margin III**

<table>
<thead>
<tr>
<th></th>
<th>gross profit</th>
<th>direct costs</th>
<th>contribution margin I</th>
</tr>
</thead>
<tbody>
<tr>
<td>overall operation</td>
<td>-12</td>
<td>-9</td>
<td>-13</td>
</tr>
<tr>
<td>sale of new vehicles</td>
<td>-12</td>
<td>-20</td>
<td>-9</td>
</tr>
</tbody>
</table>

The diagram shows the development of gross profit and contribution margin III for Volkswagen dealers total.
4. Conclusion Sales Controlling - Factoring

In summary, we can define: From a functional point of view, controlling is a subsystem of management that forms planning and control as well as information supply for them and coordinates them for the groups, thus supporting the adaptation and coordination of the overall system. Controlling thus supports management: it enables managers to adapt the overall system to environmental changes in a result-oriented manner and to perform the coordination tasks with regard to the operative system. The main problems of controlling work lie at the system interfaces. The controller is therefore also referred to as an "interface specialist" (Oetinger v. 2000).

This requires an efficient system of environmental scanning, i.e. a permanent analysis of developments in the corporate environment. The central task of marketing controlling is to gradually integrate indications of potential success into detailed market-related operational planning according to a long-term schedule. Overall, marketing controlling has a coordinating function by ensuring that strategic success potential planning is implemented in operative marketing planning and control.

The following aspects are important when structuring the overall controlling organization (Link, 2000). In this regard, the following points must be answered:

Centralization - decentralization:

To what extent and according to which task characteristics are the controlling tasks distributed in the overall organization, the company must decide.

Functionalization:

What position and competencies does the controller have in the management structure, which forms of delegation are used and which forms of delegation are possible for controlling tasks, this decision makes the company leader for his organization.

Participation:

To what extent can employees participate in the decision-making process in hierarchically higher positions, which will organize to find decisions in my company?

Standardization:

To what extent can controller activities be generalized in advance, so that lean processes and procedures exist?

Work decomposition:

What possibilities and forms of job decomposition are there for controlling tasks decide the company.
Introduction or reorganization:

How can introduction or reorganization projects in ‘Controlling’ be structured organizationally for fast decisions and fast implementation.

Each phase must build on the previous phase. In its main orientation, ‘Controlling’ must fulfil the advisory and coordinating function. The responsibility lies in the timely and professional advice of decision-makers and in the coordination of the decision-making and control process. In the case of system-building tasks, ‘Controlling’ has the authority to issue instructions, since otherwise the system cannot be set up and extended in the sense of ‘Controlling’. The controller's position in the enterprise hierarchy determines whether the controller can effectively implement the ideas of ‘Controlling’. The organization of sales controlling is subject to various forces that affect the system; it shows how the various subsystems, their functions and relationships exist; it points to the changes over time of the various system relationships.

A controller should have the capability and be trained for:
"Do today what others think about tomorrow".

Companies are confronted with an increasingly rapid change in their traditional markets. This also increases the need to abandon familiar strategies and structures. The portfolio business segment must be subjected to a critical review by the management at ever shorter intervals. Only the constant and consistent questioning of one's own activities and objectives, including the traditional and proven core businesses, enables the systematic exploitation of market opportunities and success potentials.

There is likely to be agreement that strategic management also requires methodological and information-related support with regard to the performance of its tasks, as does operational planning and control. However, the focus of this support is not on the success target, which is already manifested in expenditure and earnings, but on success potentials, which can only be described as opportunities and risks that cannot always be quantified.

Strategic and operative thinking must form a unit. In reality, the two questions:
"Are we doing the right things?" (= strategic thinking) and
"Are we doing things right?" (= operative thinking)
are inextricably linked. Reality does us no pleasure in dividing the issues strategically and operationally according to points of view.

When it comes to strategic issues, the question of operational feasibility always resonates. Conversely, operative questions only become meaningful in the light of a strategy.
This results in the demands: Planning, control and monitoring must be designed and operated as an integrated overall system, i.e. the networking of strategic and operative planning as well as of objective and formal goal-oriented planning is indispensable.

Strategic controlling and strategic sales controlling mean the performance of controlling tasks to support the strategic management of the company. Strategic controlling is the coordination of strategic planning and control with the strategic supply of information. In concrete terms, this means in particular the performance of planning management tasks in relation to strategic planning.

"Strategic controlling is the implementer; the stirrup from strategic planning to strategic management.

One of the most significant results of empirical research is that the conditions for the long-term performance of an enterprise are independent of the industry, the intensity of technical progress, the development of demand, the behavior of institutions and the size or nationality of the enterprise. Strategic business management is the method of leadership that integrates and harmonizes the various components of leadership according to an overall strategic concept, and that develops them in line with constantly changing circumstances. Even if the modalities, the focus and the intensity of the strategic management change from case to case, the bases of the long-term performance of the enterprise seem to be the same.

In other words, the company's success is based on methods and behaviors that can be generalized; it is important to develop all the components of management - division, corporate policy and culture, strategies, priorities in functional areas and regional units, organization, planning and motivation system, controlling - systematically and simultaneously, and not to privilege individual elements - products, core competencies, customer service or research and development. The companies that seem to be most successful in the long term are those that master all the components of management, integrate them into a coherent whole and train them according to the needs of the stakeholders and the development of the competitive situation.

Strategic corporate management and operational controlling can be described as a set of attitudes, decision-making and action tools with which managers and employees can achieve competitive advantages in harmony with the environment in a turbulent environment and sustainably increase the value of the company.

The mastery of these behaviors and methods, but above all the ability and willingness of managers and employees to learn faster and better than their competitors, are helpful in a competitive environment to initiate major maneuvers in good time so that the strategic business units are not distanced from their competitors.
4.1. Sales controlling and factoring - effects on the future

In the near future, there will be an increased wave of concentration within the motor vehicle trade, with dealers joining forces, cooperating or merging (Roth, 2005).

This new problem also gives rise to different starting points for the individual chain operations in terms of accounting, controlling and the effects on sales of new vehicles.

New strategic approaches and new data processing systems have to be implemented in order to be able to optimally serve the markets and sales areas in the long term. These systems can no longer be afforded by small companies, but only by large ones. Possibilities for this would be a merger to form consulting companies for small companies, which could concentrate the know-how and use it according to their specifications. This means that several small enterprises would have to join forces to manage a consulting company for sales controlling, controlling in general and accounting in order to be able to survive in the market in the long term (Schneider, 1998). In order to achieve this structuring for both small and large companies, data, computer-supported copies of sales and key figures and control indicators are necessary. Sales controlling is basically interested in short, condensed, easy-to-understand, quickly readable summaries. The most important element of the key figure is its inherent information character. Key figures can help sales management, in particular because of their ability to present complex facts that are difficult to grasp in a concise and coherent manner. An information team for strategic sales controlling must therefore ensure that only meaningful, condensed and thus management and sales-relevant information is made available to sales management (Fig. 4). Key figure systems are particularly suitable for this purpose as they can provide the leading authorities in marketing and sales with a quick and comprehensive overview of the respective sales, customer, competitive and market situations. It must not be overlooked, however, that the mathematical formalization of key figures often has a static character and can therefore only inadequately reflect the dynamics of ongoing sales processes (Fig. 5).
Fig. 4. Decision support information pyramid
(Source: Strat. sales controlling, Becker, p. 205)

Fig. 5. Signal reception via key figures
(Source: Strat. sales controlling, Becker, p. 205)
For medium-sized companies, factoring serves as a sensible supplement to classic financing instruments. Each enterprise must examine however in the apron whether the appropriate criteria can be fulfilled for the employment of the instrument Factoring.

With Factoring, a possible inclination of the enterprise cannot be compensated, but saves advantages for solid economic enterprises.

Before factoring is introduced in the company, a legal construct must be chosen that avoids and excludes any possible collisions with other assignments of receivables. From an economic point of view, too, the financial system must take into account that costs can be adjusted. Under the aforementioned conditions, factoring can unfold its full economic advantages in terms of improving liquidity, increasing the equity ratio and, as a result, an improved rating to optimize credit conditions. In addition, customers and supplier relationships can be stabilized and positively influenced in order to finance faster growth.

Factoring is not a fad, but an established financing instrument that is a sensible complement to traditional instruments. The factoring market has not yet fully unfolded its potential and will become more attractive as an alternative source of credit through further providers on the market. Thus, the instrument has a positive influence on the rating of the company (passive-active exchange in the balance sheet). Total financing must always be individually structured in order to meet the needs of the company in the best possible way. Thinking in scenarios from the outset and structuring the financing accordingly is required by the company director. Flexibility and stability must therefore not be disregarded according to the motto Identify risk diversification and parallel alternatives "Don't put all your eggs in one basket."
Companies must shape the future from a combination of operational and strategic controlling. New financial methods such as factoring can be helpful, the speed of reaction and implementation will determine the future success of the company.

References


Fig. 6. Changes through factoring (own presentation)


LEGAL FRAMEWORK OF OCCUPATIONAL HEALTH SERVICES IN THE EU AND IN BULGARIA

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Abstract

The paper examines the economic base and the legal framework of Occupational Health Services (OHS) in the EU and in Bulgaria. Through an analysis of the status, activities and key trends in their development, we have drawn conclusions on their impact on the promotion of employees’ health. Emphasis is placed on some gaps in legislation posing challenges to the effective cooperation between these services and businesses.

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Introduction

According to the definition laid down in the Constitution of the World Health Organization, health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1948). Good health is a prerequisite for the labour potential of the individual employee, and hence the normal course of economic processes. However, the dynamics in the development of new technologies, accelerating market competition, increased demands on employees and work-related stress exercise ever greater pressure on the physical and mental state of employees. The result is often poor health and lower performance. On this basis, occu-
Occupational health should be understood as a long-term maintenance of the health of employees by taking into consideration their professional, environmental and social way of life (WHO, 1999).

Despite the prevalence of measures to ensure a healthy and safe working environment, accidents and diseases at work remain a global problem in many organizations (Väyrynen, Hakkinen & Niskanen 2015, p. 7). The International Labour Organization (ILO) estimates that the worldwide economic costs related to occupational accidents and diseases amount to about 4% of the global GDP (ILO, 2014, p. 41). According to other statistics, in 2017 2.78 million deaths worldwide were a consequence of the working environment (while in 2014 they were 2.33 million), of which 86.3 percent were caused by occupational diseases and 13.7% by accidents. This means that around 7,500 people die every day: 1,000 of occupational accidents and 6,500 of occupational disease (Hamalainen, Takala & Kiat, 2017, p. 4.11).

Statistics clearly show that occupational accidents and diseases are a serious problem that requires heightened attention and effective management. The changing nature of the workplace and preventive actions promoting health at work outline the need both for cooperation within the organization and a partnership with external institutions specialised in the field of healthcare.

The objective of this paper is to examine the challenges facing the organization and the effective functioning of occupational health services in their economic and legal aspects. Through an analysis of the status, activities and key trends in their development we have drawn conclusions on their impact on the promotion of employees’ health.

Based on the above objective, the authors pursue the following main tasks:

1) to outline the conditions for establishment and operation of occupational health services at European Union (EU) level and their heterogeneous nature;

2) to identify the benefits of organizing effective promotion of workplace health;

3) to analyse the existing and applicable laws and regulations and outline the functions and tasks of occupational health services in Bulgaria as well as the challenges to their operations;

4) to analyse the proposed adoption of Standards for the operation of occupational health services, highlight their main parameters and identify positive outcomes from their adoption.

In pursuing the above objective the authors use the complex methods traditionally employed for economic and legal studies: analysis, synthesis, generalization, induction and deduction.
1. Promotion of workplace health and occupational health services in the European Union

The concept of providing a healthy working environment is not new to modern European society. Article 153 of the Treaty on the Functioning of the EU envisages improvement in particular of the working environment to protect workers’ health and safety (EU, 2012). Protection of workplace health is also regulated in Framework Directive 89/391/EEC, which requires continuous and systematic improvement of the safety and health of employees by carrying out risk assessment and integration of preventive measures in all activities (EU, 1989). The Directive is implemented in all Member States and is accompanied by more than 25 related directives on various issues (EU, 2016, p. 4). Article 7 of Directive 89/391/EEC requires every employer to ensure safe and healthy working conditions by designating one or more employees to carry out activities related to the protection of health and prevention of occupational risks, or (if this is not possible) to enlist competent external services or persons. It can be assumed that this is the basis for existence of occupational health services (OHS), although the text does not use that name.

At the same time, Article 7 does not impose an obligation on Member States to use external services to ensure occupational health. In the EU there are no specific rules or policies for services related to healthy working environment. The organization of a national system of protective and preventive health measures for the workplace is a matter of national choice expressed in the relevant domestic legislation. However, Member States can fall back on Convention C-161 ILO (ILO, 1985a) concerning occupational health services and ILO Recommendation (R-171) concerning occupational health services (ILO, 1985b). Another supporting institution is the Permanent Commission on Occupational Health established in 1906 in Milan (Harrison & Dawson, 2016, p. 143), now known as International Commission on Occupational Health (ICOH). ICOH is an international non-governmental professional society whose aims are to foster the scientific progress, knowledge and development of occupational health and safety in all its aspects and which already has more than 2,000 professional members from 93 countries.

All EU countries have passed specific national laws on prevention of risks and protection of health in the workplace, but services develop differently in accordance with the historical context (e.g. the organization of public health) or differing views of governments.

This diversity makes it difficult to adopt uniform criteria for research, analysis and evaluation of the effects and benefits of the use of specially established
occupational health services in some countries. It has even been pointed out that the factors related to the functional cooperation between employers and health care providers have rarely been researched over the past 16 years (Halonen, J. et al., 2017, p. 6).

Three studies carried out between 2007 and 2010 examine the results of interventions in businesses aimed at improving the health of employees (Tompa et al., 2007; Verbeek, Pulliainen & Kankaanpää, 2009; Uegaki et al., 2010). The final conclusions show that there is no clear evidence of benefits arising from interventions by occupational health services. The reasons include lack of a common framework for assessment, the heterogeneity of the studies, the various uncertainty factors, poor implementation of economic assessment by employers, etc. In 2014, another study explored the "cost - efficiency" and "cost – benefit" from improved health of workers’ correlations (Targoutzidis et al., 2014). The study analysed 13 business cases of interventions in workplace health among SMEs in the EU. The conclusions show that all 13 cases are expected to be profitable after 7-10 years, and 11 of them are expected to be profitable as soon as within the next five years. The overall conclusion of the study is that investments in new equipment are less effective in terms of workplace health than interventions related to training, improved organization of workplaces and activities on health risk prevention.

Therefore, effective action on preserving the employees’ health requires both cooperation between employers and employees and partnerships with external institutions that have the necessary capacity, such as occupational health services. There is a growing opinion that cooperation between such services and employers is a prerequisite for effective healthcare and occupational safety and health (Peltomäki & Husman, 2002b; Saaranen et al., 2007). The benefits of such cooperation are manifested in fewer cases of sickness absence (Ståhl et al., 2015), increased trust among institutions and the ability to solve problems through the joint use of a wider range of available resources (Peltomäki & Husman, 2002a). There is also evidence of a positive interrelation between workplace health interventions, sustainable development and productivity gains (MacLeod & Clarke, 2009).

Good cooperation between employers and occupational health services can provide threefold benefits: for employees, for employers themselves and for the economy as a whole. Table 1 presents in synthesized form some of these benefits.
The benefits provided by occupational health services

<table>
<thead>
<tr>
<th>Employees</th>
<th>Employers</th>
<th>Economy</th>
</tr>
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<tbody>
<tr>
<td>Protect and promote health costs</td>
<td>Help reduce sickness absence</td>
<td>Reduce NHS care costs</td>
</tr>
<tr>
<td>Help prevent work-related illnesses</td>
<td>Improve business performance</td>
<td>Reduce the cost of state benefits</td>
</tr>
<tr>
<td>Manage return to work after illness</td>
<td>Avoid litigation</td>
<td>Increase tax revenues</td>
</tr>
<tr>
<td>Maintain earnings</td>
<td>Improve corporate image</td>
<td>Revitalise the economy</td>
</tr>
<tr>
<td>Maintain quality of life</td>
<td></td>
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</table>

*Source: Nicholson (2017, p. 6).*

Well-organized health initiatives ensure the good health condition of employees and reduce the likelihood of diseases and the need to pay for treatment, thus providing a better quality of life.

Better employees’ health is beneficial for employers in that reduced sickness absence and better business performance result in more financial benefits, better market performance and a competitive advantage for the business. Compliance with legislation and social responsibility create a good corporate image and positive attitude on the part of customers, partners and employees.

The good health of employees reduces health care costs funded by the state. Accordingly, the improved functioning of the business contributes both to accelerated growth and increased tax revenues in the budget of the relevant country, and to building a sustainable development in the long term.

The achieved benefits and the effectiveness of health risk prevention depend very much on the established relationship and communication between occupational health services and their customers. The existence of dialogue and frequent contacts will help to build bilateral trust (Halonen, J. et al., 2017) and better understanding on the part of health service providers of the employer’s objectives and the functions and objectives of the organization itself.

In 2005, WHO, ILO and the International Commission on Occupational Health jointly launched the Basic Occupational Health Services initiative, with the aim to provide OH globally at some level to all working people (Harrison & Dawson, 2016, p. 145). However, in accordance with Framework Directive 89/391/EEC, competent external services (presumably including occupational health services) must have the necessary aptitudes and qualified personnel, and Member States are free to determine the scope of the phrase "suitably qualified personnel." As a result of different
definitions of skills and abilities there emerged differences in the quality of occupational safety and health in separate European countries (Hämäläinen, 2008, p. 161). This highlights the need to specify at European level what the competencies of the occupational health service teams should be in order to achieve quality management of occupational disease risks.

2. Organization and legislative regulation of occupational health services in Bulgaria

In 1997, Bulgaria was the first among Eastern European countries to pass a law on occupational safety and health, namely the Health and Safety at Work Act (HSWA), which obliges employers to provide servicing of their employees by occupational health services (OHS). A query into the records of the Ministry of Health (MoH) shows that as of November 2018 there were 641 occupational health services registered in Bulgaria. Their status is regulated at two main levels: at the level of a special law (HSWA) and at the level of secondary legislation (Ordinance No. 3 of the Ministry of Health and Ministry of Labour and Social Policy, 2008). OHS are separate legal entities registered with the Ministry of Health. They can be established in three ways: by employers (individually or jointly with other employers), by legal or natural persons registered under the Commerce Act, under the Cooperatives Act or under the Non-Profit Legal Entities Act, and, thirdly, by companies existing under the legislation of a Member State of the European Union or a Contracting Party to the Agreement on the European economic Area. If it is impossible for the employer to establish alone or in partnership an occupational health service, the employer may enter into a contract with an already registered service.

Perceived as a basic component in the occupational safety and health management system, OHS operate as entities with predominantly preventive functions expressed in providing consulting and advisory assistance to the employer, committees and groups on working conditions aimed at ensuring safety and health at work.

The functions of OHS as per the current legal framework can be summarized into several basic levels. The first is the prevention of health risks in the working environment, carried out through observation, analysis and evaluation of the health of all serviced employees in relation to the working conditions. Of particular importance here is the provision by OHS of information to medical professionals performing periodic medical examinations, regarding identified hazards and risks for the health and safety of employees, and issuing an opinion on the ability of employees to perform particular work. In that sense a crucial obligation of OHS is to analyse the health status of employees and its relation to working conditions.
The second level has to do with keeping and reporting of collected information. With a view to track the health status of every employee in relation to the working conditions, OHS keep health records in electronic and paper form. HSWA imposes on OHS the obligation to keep and maintain documentation regarding the health status of employees – information that is actually protected by law as personal data with limited access (Personal Data Protection Act, 2002). This necessitates additional synchronization between the two laws.

The third level of competence concerns the participation of OHS in the assessment of risks for the health and safety of employees as required by laws and regulations. In particular, jointly with representatives of the employer, OHS develop and propose measures to eliminate or reduce the risk identified, offer gradation by priority of measures on promotion of health and safety, the causes of identified hazards and their characteristics, including feasibility and effectiveness of the measures taken by the employer.

The fourth level is associated with informative and educational competencies. In this sense OHS organize and conduct training of employees under the rules of first aid, self-help and mutual assistance in connection with specific workplace hazards, provide information to employees about health risks associated with the work and the results of medical examinations and tests, give individual advice on health and safety at work, participate in the implementation of programs to promote the health of employees in the workplace, including by eliminating risk factors in the lifestyle, protecting and enhancing the working capacity and overcoming stress at work, consulting and assisting the committees and groups on working conditions in carrying out their activities.

Of particular significance are the competencies of OHS at the level of developing rules, programs and strategies for action. OHS develop recommendations for employers on reorganization of the workplace, work organization and workload of employees in need of special protection, develop and participate in the implementation of training programs for managerial staff, employees and their representatives about rules to ensure the health and safety at work and compliance with the requirements for safe working practices. In that sense they assist employers in implementing the statutory requirements relating to health and safety at work, in developing rules, norms and instructions in enterprises to ensure health and safety at work and advise employees on their proper application.
3. Trends and challenges in the activities of occupational health services

As already mentioned, the activities of OHS are regulated by Ordinance No. 3 (2008) on the terms and procedure for the activities of occupational health services of the Minister of Health and the Minister of Labour and Social Policy. This is a relatively old piece of legislation, which has not been amended or supplemented since, and has been rightly criticized as archaic, given the dynamics in the development of new social realities.

The latest amendments in HSWA, namely in Article 25a, Para. 3 (suppl. SG 97 of 2017) stipulate that OHS shall operate in accordance with established quality standards and the requirements of the laws and regulation for ensuring health and safety at work. At the same time, Paragraph 4 (New – SG 97 of 2017) establishes a requirement that the quality standards for operation of occupational health services shall be approved by the Minister of Health and the Minister of Labour and Social Policy through the Ordinance envisaged in Art. 25b, Para. 4.

This is a timely legislative decision which came to life as a response to the rather perfunctory implementation of protective and preventive measures by both OHS and the employers. Another effort in this regard is the draft Quality Standards for the Activities of Occupational Health Services. The latter provide for radical changes in the overall system of the planned activities at the levels of competent individuals, introduce standards in key areas and criteria to evaluate the performance at different levels.

A substantial element of the draft is the specification of the capacity of the persons with competencies in prevention and medical activities. It is suggested that such tasks be carried out by a physician specialized in occupational medicine. In addition, the minimum personnel of OHS is envisaged to include an engineer qualified in health and safety with at least 3 years’ experience in labour protection, and a technical officer with at least secondary education.

A special subject of the Standard is introduced: activities related to employees working in high occupational risk and a risk reduction, restriction or elimination program, and employees needing labour readjustment.

Two basic directions of the activities of OHS are envisaged: preventive and socio-medical. The first is the basic and with highest priority. It concerns assisting, advising and counselling employers about their rights and obligations regarding health and safety at work.

The first direction also includes the engagement to analyse and assess the risk at the level of cooperation with representatives of the employer and to provide
information to management and employees on the risks identified in basic workplaces and professions. Risk assessment is to be carried out on the basis of risk identification. It includes monitoring and analysis of work processes, creating lists of professions and positions in order of priority, exposure estimation based on objective measurements by Bulgarian Accreditation Service-accredited authorities for control of working environment factors.

Another obligation is to manage risks by developing and proposing measures for prevention, elimination or reduction of the identified risk, together with representatives of the employer, and to determine their feasibility and efficiency, according to the cost-benefit principle, taking into account the risk identified, the causes of identified hazards and their characteristics. It is envisaged to carry out assessment of the effectiveness of measures taken by the employer after a certain period, make recommendations for the employer regarding reorganization of workplaces, labour and workload organization for employees in need of special protection, development and participation in the implementation of training programs for employers, executives, employees and their representatives on the rules for health and safety at work and compliance with the requirements for safe work practice.

Preventive measures also include training of committees and groups on working conditions, trainings of employees on the rules of first aid in connection with specific workplace hazards, promotion of health and prevention of health risks by removing the risk factors in the manner of life and work in order to protect and strengthen the working capacity and overcome stress.

Direct commitments are stipulated with regard to supporting employers in implementing the statutory requirements relating to health and safety at work, including preparation, implementation and reporting of the effectiveness of physiological regimes of work and rest where a specific occupational risk exists, identified through refined professional examination of risk factors in the working environment and the work process.

The second direction is socio-medical. It is intended to include measures to maintain competence and skills in the implementation of complex programs on promotion of occupational health, prevention of work-related health problems, traumatic accidents and diseases, educational training on performing the functions of occupational medicine, developing occupational health activities, strategies for the development and management of companies and other economic structures in accordance with the objectives of public health and health systems. Of particular importance is the requirement to develop models and systems for occupational health activities with a focus on the specific needs of employees by organizing and
conducting their training under the first aid rules in connection with specific workplace hazards.

A significant place within this direction is occupied by **expertise of occupational diseases** mainly through research and documentation of working conditions, participation in the investigation of occupational accidents and non-traumatic injuries, confirmation or rejection of the occupational nature of the disease, as well as drawing up documents for proper consideration by committees of the National Social Security Insurance (NSSI).

In terms of public needs and the employers’ practices, an appropriate step is the introduction of criteria relating to specific indicators of quality, satisfaction, performance metrics, a system of monitoring and control measures at the interdepartmental level, feedback and level of interaction of individual employers and employees.

We should also note the introduction of standards such as integrity and ethical norms, indicators related to specific moral commitments and feedback in the implementation of the competences, requiring OHS not to allow financial, commercial or other influences to compromise their impartiality. At the same time OHS are required to assess the risks for impartiality and manage them through an internal monitoring system, according to the “integrity” criterion. On the other hand, the individual OHS should only advertise services it actually is capable of providing, in accordance with the qualifications of its staff.

Highly important is the requirement for OHS to ensure that employees are treated fairly and in accordance with professional standards. At the same time OHS must inform the employees, via their employers, about how personal health data are recorded and for what purpose they are used, how to gain access to personal information and what their rights are.

**The positive aspects of the draft Standards include:**

1) they establish permanently specific requirements for the implementation of activities, with the respective criteria for feedback, efficiency and satisfaction;

2) they clearly define two separate directions as separate aspects of the activities, with their inherent competencies, commitments and degrees of applicability;

3) they introduce clear performance criteria with extensive application of interconnectedness with the employer on the one hand and with employees on the other hand, at the level of adaptability, communication, equality of rights and equitable treatment;

4) in the implementation of the quality standard for the activities performed by OHS it is crucial to put in place a system of progress monitoring and evaluation of the
results of each of the specific actions and to establish indicators of impartiality and ethical norms. At the same time it is necessary to be able to hold the actors responsible for the observance of such norms in their application in practice;

5) coordinated fulfilment of the commitments by providing the results of the analysis of indicators of employees and employers in a way that enables their taking into account in policy making and a better understanding of occupational health-related activities.

However, the adoption and proper application of the standards should not be viewed in separation from the need to bring up to date the administrative liability in performing the activities of OHS. At present, the measures are inadequate, given the lack of an elaborate mechanism of prevention and sanctions and the frequent reference to the general law (Andreeva, A. Yolova, G., 2018). In this sense, it is necessary to create a comprehensive system of punitive administrative measures corresponding to the processes of implementation of the standards.

**Conclusion**

The legal analysis made in the article provides the basis for the following conclusions and summaries.

In EU legislation there are no express provisions on creating occupational medicine services in all Member States. This hampers the use of benchmarking and analysis to determine how effectively such services operate.

However, various studies at European level demonstrate the benefits of a well-organized cooperation between employers and occupational health services for prevention of and protection against occupational health risks.

In Bulgaria the activities of OHS are governed by law, but still there are certain shortcomings in this area. The existing legal framework is relatively scarce, and there are lasting trends of random or superficial implementation of best practices. In this regard the Standards are a necessary legislative measure to overcome these shortcomings and to provide a stable legal framework reflecting the social needs.

**End Notes**

1 http://www.icohweb.org/site/about-icoh.asp.
2 http://www.mh.government.bg/bg/administrativni-uslugi/registri/.
4 An opinion of the members of the National Council of the Bulgarian Industrial Capital Association (BICA) lays down the need for urgent reform in the Ordinance on the activities of occupational health services and the Ordinance on preliminary and
periodic medical examinations of workers. Among the most important measures are that preventive examinations and inspections on working conditions are to be carried out with individual scope, frequency and standard for each separate risk factor, as it is the practice in other EU countries. Only the standards can ensure the quality of the examination and the comparability of results under uniform criteria, regardless of where the examinations are performed and who performs them. Under the current legislation (Ordinance No. 1 of the Ministry of Health, 2015) the medical specialty "Occupational Medicine" is acquired by persons with Master of Medicine degree.

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- If the manuscript meets the requirements of the first stage, it is sent to two independent reviewers. The magazine applies the principle of double-blind review.
- After receiving the feedback reports from the two reviewers, the editorial board decides whether to accept or reject the manuscript. To do this there needs to be unanimous opinion from both reviewers. If their opinions are extremely opposite, the editor-in-chief can require another expert opinion from a third reviewer.
- A manuscript can be accepted without any remarks or with minimal correction. This does not require another check from a reviewer.
- A manuscript can be accepted with a recommendation for substantial correction. This requires for reviewers to confirm again the truthfulness and relevance of their corrections, after that the editor-in-chief makes the decision for publishing the article.
- The manuscript can be returned to its author for substantial rewriting and a second review process.
- In case the manuscript is rejected, its author cannot send it again.
Structure of the manuscript

Requirements about the structure of the manuscript:

✓ Title – clearly and precisely stated, relatively short.

✓ Abstract – it must resemble a summary and include the objectives of the research, methodology and results;

✓ Key words – precise and sufficient, not more than five.

✓ Introduction – it should state the objectives of the research and the relevance of the scientific problem; it should review the condition of the issue and review references; it should also give the theoretical framework of the research, lead to research questions and hypotheses.

✓ Methodology and data – the methods used should be correct and include also appropriate references on similar, already published methods. The data shown must come from reliable sources.

✓ Results and outcomes (conclusions) – the results should be presented clearly and elaborated correctly; they must show a better way of using the data. Conclusions must be significant, valid and supported by proofs.

✓ Bibliographic sources (references).

Formatting:

The papers suggested for publishing must meet the following technical requirements:

✓ Manuscripts typed in Word for Windows, font - Times New Roman, font size – 14 pt, line spacing – 1.5 lines.

✓ Size of tables and charts – not larger than A4. The numeration of tables and charts should be consecutive in the wording of the paper. The use of colour charts, graphs and pictures are not accepted. All tables, figures, charts and images should be editable.

✓ Margins in cm: top – 2.5, bottom – 2.5, left – 2.5, right – 2.5.

✓ The title should be typed in caps, without abbreviations (font - Times New Roman, font size - 14 pt, line spacing - 1.5 lines, Bold – Center).

✓ At the right top corner above the title it is typed EconLit index in JEL (Journal of Economic Literature) classification system.

✓ After the title articles must include an abstract (10-12 lines) and up to 5 key words. The abstract and the key words should be written in Bulgarian and English (for articles in Bulgarian) and only in English for the articles submitted in English.
✓ Listing the used sources and citations is done in compliance with the Harvard short reference system (See examples of description and citation). The quoted sources of a scientific research paper should be at least 20 and transliteration is obligatory. Footnotes are not recommended, except when necessary. If so-called “notes” need to be used, they should be indexed with Arabic numerals and are explained at the end of the article, before the references.

✓ The papers should be written without any handwriting and crossing out words, in good Bulgarian and, respectively, English.

After the article is received, it is edited language- and style-wise. As for the Language the editor makes insignificant corrections since it is supposed that the papers are written in good Bulgarian and English. The articles in English can be returned for another check by the author. Authors confirm the suggestions for changes in style or mark what they disagree with.

Acceptable size of manuscripts:

- for articles – from 16 to 20 pages;
- for micro articles, reviews and abstracts of dissertation papers - up to 10 pages.

Articles submitted for publishing must be original and not published before or in the process of reviewing and preparation for publishing in other publishing houses. Editors have the right to make insignificant editing corrections on the manuscript. After an article is accepted, authors must declare an agreement and give the publishing house the exceptional right for publishing. Authors can use the article or part of it in their future work without permission from the publishing house, but this would require citing the original article.