Impacts of Corporate Social Responsibility Elements on Policy of Net Working Capital Management with respect to Business Performance in the Czech Republic

Roman Dubový, Zdeněk Motlíček

Abstract: The issue of asset and capital structure management in the corporations is, similarly to the issue of implementation of corporate social responsibility elements in the form of environmental management and occupational safety, a significant topic in the corporate environment of non-financial character in pursuance of gaining competitive advantage in the global marketplace. The question remains to what extent these two factors are involved in the determination of the economic performance of the company. Common base of both research topics is their high attractivity for entrepreneurs, combined with inadequate number of empirical experience in corporate practice. The basis of the research is modelling the impact of the implementation of environmental management and occupational safety on the performance of businesses and the management of net working capital. Subsequently, the secondary effects on the riskiness of financial structure of companies surveyed, are examined, which is an important factor in investors’ assessments. The paper presents empirical research that aims to quantify the links between environmental management, occupational safety and management of net working capital and subsequently quantify their impact on corporate economic performance, represented by the economic value added (EVA), all with regards to feedback connections. A prerequisite for modelling was a multivariate regression model whose explanatory variables were the assets structure, the capital structure and the ownership of certification standards OHSAS 18001 and ISO 14001. The model has been applied to a group of large companies based in the Czech Republic, operating in the automotive sector. As part of the results a positive influence of the ownership of certification standards on EVA performance has been expected.

Key words: Corporate social responsibility · Net working capital · Economic performance

JEL Classification: M21

1 Introduction

Business environment that is strictly focused on efficiency and effectiveness generates a large amount of secondary effects on the environment in which it operates. It is now possible to register a significant growth of mainly negative consequences for society. Climate change, environmental pollution, ignorance of the law, ignorance of the social responsibility of the organization to employees and corporate environment. This list represents only a small part of the ethical problems that occur in the global environment. Aim of this paper is to quantify the links between environmental management, occupational safety and management of net working capital and the subsequent quantification of their impact on economic value added EVA.

Corporate social responsibility (CSR) as such is still the subject of extensive discussions of many studies (Greenfield, 2004; Maignan and Ralston, 2002; Mc Williams et al., 2006; Pearce and Doh, 2005), leading not only to do the right things, but also leading to better results (Bhattacharya and Sen, 2004). CSR concept is still interpreted in different ways. The most famous interpretation is presented in the Green Paper (European Union): "CSR is the voluntary integration of social and ecological aspects into everyday corporate operations and interactions with corporate stakeholders, which can be divided into primary, including owners, employees, customers, business partners, local communities and NGOs, and secondary, including competitors, the public, the media, civic and business associations and government institutions."

Generally, there are derived the common grounds that can be considered as the basic principles of CSR. Among them belongs:
• voluntary initiative beyond the required legislation,
• improving the quality of life,
• sustainable development,
• communication with participants,
• integration of social and environmental values into everyday business practices.

As consequence, CSR has shifted from the ideological framework to the reality and many experts deem necessary for the corporations to define their role in society in terms of social and ethical standards in business (Pinkston and Carroll, 1994). Although corporations are still trying to maintain and demonstrate its commitment to fulfilling CSR, many of them are struggling with the implementation of this effort (Lindgreen et al., 2009). Although there is no single, universally accepted definition of CSR activities, Kunz (2012) generally divides activities into three areas: economic, social, and environmental. These are the environmental and social CSR fields that are the subject of the present paper, about working capital and thus with the performance of corporations.

The automotive industry is currently a powerful global industry, which is mainly affected by the climate change, decrease in natural resources, energy security, demographic changes and employment, innovations, and new green technologies. In the Czech Republic, there is the backbone of the automotive industry Skoda Auto, TPCA, Hyundai, Tatra, Avia, Iveco and SOR. The largest share in the performance of the automotive industry is mainly formed by suppliers of components and spare parts. The significance of this sector can be confirmed by the production of more than 16 million cars on EU territory for the year 2015, in the Czech Republic these are 1.3 million cars (European Automobile Association Manufacturers’, 2015). The challenges and opportunities given are associated with the concept of CSR, which is in the case of the automotive industry closely linked to sustainable development (Dunphy et al., 2014).

A lot of norms and standards have been created by the government and non-governmental organizations (as per the International Organization for Standardization, IOS) to help implement the CSR strategy. In the automotive industry, the management systems are usually certified by ISO 9001, ISO 14001, and ISO/TS 16949. Implementation of ISO 9001 is focused on the quality of the system, or more precisely, it aims to achieve a competitive advantage through the quality control. Certification of ISO 9001 demonstrates the company's commitment to deliver quality. The norm is not intended only for the automotive industry, but it can be used in all areas of production and services. In the automotive industry, the industry standards usually accompany the norm, such as QS 9000 or VDA (the standard that focuses on the system of the quality management of the suppliers). ISO/TS 16949: 2009 is the new departmental standard, designed exclusively for the system of quality management in the automotive industry, which unifies the requirements for a quality management system in the industry. This standard contains the full text of ISO 9001: 2008 and is supplemented by more specific requirements of the automotive industry.

The most commonly voluntarily used standard in the automotive industry is per Czech technical standards ISO 14001. Its principle is to promote environmental protection and prevention from its pollution. The standard was approved by the European Committee for Standardization (ECS in English, CEN in French), which is a non-profit organization dealing mainly with the support of the European economy, global trade, prosperity of the European population and the environment.

ISO 14001 is per IOS based on the methodology of Plan-Do-Check-Act (PDCA):

- **Plan**: establish the objectives and processes necessary to deliver results in line with the organization's environmental policy.
- **Do**: apply processes.
- **Check**: monitor and measure processes in relation to environmental policy, objectives, the targets, legal requirements, and other requirements and show results.
- **Act**: take actions to continually improve performance of the environmental management system.

A very important standard implemented in the automotive industry, which in not very well known, is ISO 18001, OHSAS: 2007 - Occupational Health and Safety Management Systems. The standard represents a certification of management systems of health and safety at work. OHSAS 18001 specifies requirements for occupational safety and health (OSH), and thereby it creates conditions for corporations to responsibly manage risks and improve the safety and health of their employees. The benefit from the implementation of this standard is to help minimize the risks to employees, improve the current system of OSH, gain confidence, demonstrate care, and others (OHSAS 18001 B., 2007).

About the introduction of ISO standards 14001 and OHSAS 18001 as non-financial factors of CSR, there are hidden impacts on net working capital about final business performance. These impacts on net working capital management result mainly from the need for innovation and investment to obtain the above certifications. In relation with decisions
on such investments is also linked its financing strategy, which consequently affects the policy of net working capital management. It is therefore necessary to manage working capital with respect to the implementation of ISO standards and their subsequent compliance.

In relation to working capital management the companies generally consider two basic management policies, namely aggressive and moderate (Nazir and Afza, 2009 A).

The first management approach is the aggressive policy when a business tends to have the smallest ratio of liquid assets, which are financed by short-term resources. This way leads to a shortening of turnover cycle and the release of tied funds. Furthermore, due to the aggressive policy of working capital management, a growth of short-term debt ratio appears, which supports the use of this approach since short-term debt is considered as the cheapest source of financing. Another effect can be seen in increase of debt financing and subsequently in increase of financial leverage, which improves the return on equity. On the other hand, according Birghama and Ehrhardt (2014), the aggressive policy of working capital management is not a sustainable strategy in the long term, which is also confirmed by Besley and Birgham (2012), since the aggressive policy significantly reduces the liquidity position of the company. From another point of view, Brooks (2013) points out that business improvement, the shortening of the turnover cycle must necessarily harm either suppliers or customers.

The aggressive policy of working capital management is ultimately targeted to maximize profitability from the perspective of the owner of the company at a price higher than a risk of financial structure. In contrast, the moderate policy of net working capital management aims to multiple interest groups, since it tries to lower a risk of financial structure and it is a cost of other sources. This in turn leads to a greater commitment by the financial resources of the company's assets. On the other hand, this situation is favourable from the viewpoint of the customer, since it may result in increased sales. On the liabilities side of the balance sheet, the moderate policy of working capital management strives for a greater proportion of long-term resources, allowing businesses to benefit from the discount.

Režňáková (2010) examines net working capital from the perspective of solvency of the company. By optimizing the components of net working capital, per the authors, it is affected the liquidity of the company and thus the risk of the investor, which influences the weighted average cost of capital. This confirms the view Pavelková and Knápková (2009), who state that the working capital management items on the liabilities side, affects debts of the company and thus the risk. This in turn leads to a reduction in the average cost of capital and thus it leads to increase in the economic value added. On the other hand, this results in a lower proportion of debt financing and to a higher proportion of 'more expensive' equity, which in turn will lead to an increase in the weighted average cost of capital. Generally, in this area, the influence on the direction cannot be clearly determined.

Režňáková (2010) further states that the aggressive policy of WCM increases the performance of the company from the perspective of the owner, because the effect of increasing the return on invested capital will exceed the effect of lower profit due to a decline in sales. This is also confirmed by Vahid et al (2012). Bellouma (2011) affirms that a reduction in turnover cycle be the method of financing small and medium enterprises in developing markets. This statement is in accordance with Váchal and Vochozka (2013), who in this context emphasize that money tied up in current assets must be assessed in terms of opportunity cost. This issue is further elaborated by Lind et al (2012), who reported that the growth of working capital would lead to a greater commitment of capital as such, and would reduce the return on investment. These authors also argue that changes in average collection period are largely offset by changes in creditors payment period and a major influence on the development of cash conversion cycle can be seen in inventory turnover. This leads to the idea that the working capital management is essential to focus on, especially in case of just inventory management. Bei and Wijewardana (2012) believe that it is highly important to be focused on proper working capital management. But as stated by Režňáková (2010), it is necessary to consider differences between sectors. Per Filibecka and Kruger (2005) these differences between the sectors tend to be constant in time.

Banos-Caballero, Garcia-Teruel Martínez-Solano (2014) suggest that reducing levels of working capital may have a positive effect on the performance of businesses to a certain point. Due to their findings, the size of the item is affected by the limitations of the company in attracting external funding. Per the authors, the most important part of restricting access to external sources is their price, which becomes part of the cost of capital. With this idea agrees Nazira and Afza (2009 A).

Hill, Kelly and Higfield (2010) empirically verify the impact of the cost of capital on investment in working capital. Per their research, increase in the cost of capital reduces these investments and leads businesses to a more aggressive approach in managing payables, receivables, and inventory. Vochozka with Mulač (2012) also resemble a conflict of interest between owners, who prefer a more aggressive approach, and managers who prefer a more moderate policy, which is also confirmed by Ručková with Roubickova (2012) and Fotr (2012).
Režňáková (2010) further highlights the impact operationally necessary net working capital to the company. Per the author if the need is negative, or vice versa is too large, it leads to a decrease in the value of the company. Pirvutoiu (2009) concludes that a company having a negative net working capital cannot meet its obligations and a positive value of net working capital is therefore a condition of its continual existence.

However, other authors are not so strict and claim that it is a risky way of financing, which in turn will probably lead to higher costs of capital. But the question remains whether this theory was confirmed by empirical research examining the behaviour of enterprises and the development of their profits. Generally, the short-term bank loans generate higher financial costs. This is probably due to the asymmetry in securing commitments to creditors. Furthermore, zero cost of trade payables are also questionable. It can be expected that with the use of trade credit is connected the rejection of discounts (discounts for prompt payment or earlier). Per Brooks (2013), the unused discount in the light of opportunity costs can be understood as an interest on commercial credit, and it must be weighed against other financing costs.

Working capital management influences the business performance through several channels. It affects the amount of revenues, costs, and the size of financial leverage. Selected performance targets then affect policy of working capital management, and the method of its optimization.

Banos-Caballero, Garcia-Teruela Martín-ez-Solano (2014) were concerned in finding an optimal level of working capital. Their model is largely influenced by the fact whether enterprises have limited access to external sources of funding or not. These authors argue that the relationship between business performance and the level of working capital has a concave shape. Based on this finding, looking for a local extreme determines the optimal level of current assets. Their assumption is based on two contradictory phenomena. On the one hand, a growth of levels of working capital will lead to higher sales and better opportunities for the use of early payment discounts from liability and thus will lead to an increase in corporate performance. On the other hand, a larger volume of assets creates a greater need for financing resources. With this issue are naturally associated costs of these resources, which will grow with increasing debt of the company. This effect in turn leads companies to lower levels of working capital and the stronger, the more access to external resources limited.

Similarly, Nazir and Afza (2009 B) examined the impact of WCM policy on the company's profitability. The results of their model indicate that with the growth of aggressive asset management, declines the corporate profitability measured by return on assets. On the passive said we can see the same effect. With increasing aggressiveness, profitability decreases. On the other hand, the aggressive management policy of liabilities associated value growth Tobin's Q. It could be said that investors prefer companies that use more short-term debt.

The same conclusions came from Tufail (2013) who noted the same direction of the management of assets and liabilities on return on assets. The author also mentioned the impact of debt equity firm on its profitability, which recorded a negative correlation here.

2 Methods

The research used secondary data of comparably sized businesses within one sector. The choice of this method seems to be necessary because diversity in terms of companies' size generates different levels of working capital held between sectors and leads to different performance measurement in relation to the selection of non-financial factors about CSR. The secondary data was analysed and the results were subjected to further research exploitation.

The research of secondary data is related to a specific sample of large manufacturing businesses based in the Czech Republic. Based on the statistical classification of economic activities CZ NACE, the businesses engaged in the manufacture of motor vehicles and trailers were selected (the code designation CZ NACE 29). The Amadeus database was used for the collection of secondary data.

The criteria for the selection of business entities from the Czech Republic were as follows:

- active business entity,
- large business,
- a limited liability company, joint stock company,
- CZ NACE 29,
- based in the Czech Republic.

About the identification of a suitable sample of businesses, the selection of companies with incomplete data entries or extreme data values was made. The business entities publishing the data about the size of current assets, total assets, short-term debts, and total debts remain in the sample. These factors were determined to capture the structure of assets
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and liabilities as explanatory variables. The research was conducted on data for the year 2013 and the total sample consists of 168 businesses based in the Czech Republic.

For the analysis of input data, a multivariate regression analysis was used, which aims to quantify the impact of selected explanatory variables on the economic performance of enterprises, represented by the economic value added (EVA). The explanatory variables of regression model were the structure of assets and the structure of liabilities in the form of elements of net working capital, the return on sales (ROS) calculated from EBIT, the size of weighted average cost of capital WACC, and the ownership of certification standards ISO 14001 and ISO 18001 OHSAS, which represents a dummy variable as a proxy for the implementation of non-financial factors of CSR in the form of environmental management and occupational safety system. As an explained dependent variable, the economic value added EVA was chosen. The following figure explains the logical links between different variables in absolute terms.

**Figure 5 Logical links between variables**

Economic value added was calculated by the following equation:

\[ \text{EVA} = \text{EBIT} \times (1 - \text{T}) - \text{C} \times \text{WACC} \]

(1)

Where:
- EVA is Economic value added [CZK]
- EBIT is Earning before interest and taxes [CZK]
- T is percentage of taxes [%]
- C is amount of capital [CZK]
- WACC is Weighted average cost of capital, where cost of equity was obtained by CAPM model.

Based on the specified dependent and explanatory variables, the following functional relationship was analysed, in which the applications of economic verification set the expected signs. The authors assume that the implementation of the certification standards ISO with respect to CSR may lead to an increase of economic value added EVA, which would be confirmed by the positive correlation between the two variables. A positive impact on EVA is expected in the case of following variables: Assets (+), Sales (+), EBIT (+). In the case of NWC variable both positive and negative influences are supposed (+, -). On the contrary, a negative correlation would be found in the case of the variable Costs representing the WACC (-). The explanatory variables ROS (+) and Capital (+) are used to capture the structure of assets and liabilities, in which the authors suggest a positive correlation to the EVA. The functional relationship is determined as follows:

\[ \text{EVA} = f(\text{Capital}, \text{ROS}, \text{WACC}, d\text{\_ISO\_14001}, \pm d\text{\_ISO\_18001}) \]

(2)

where \( f(\pm \text{Capital}, \pm \text{ROS}, -\text{WACC}, +d\text{\_ISO\_14001}, \pm d\text{\_ISO\_18001}) \). (3)

Based on the results, the model was verified in the context of economic verification, or alternatively, statistically insignificant variables reduced it. Thus, the model verified belongs among the desirable BUE or BLUE economic estimates.

Within the data analysis the following multidimensional model was determined:

\[ \text{EVA} = \beta_0 \text{const.} + \beta_1 \text{Capital} + \beta_2 \text{ROS} - \beta_3 \text{WACC} + \beta_4 d\text{\_ISO\_14001} \pm \beta_5 d\text{\_ISO\_18001} + \epsilon \]

(4)

where:
- EVA represents the economic performance of businesses, relatively expressed in sales [%],
- const. is a constant term of the regression model,
- Capital represents the structure of liabilities, relatively expressed in sales,
WACC is the weighted average cost of capital, 
ISO 14001 as a dummy variable representing a non-financial factor for CSR in the form of environmental management, 
ISO 18001 as a dummy variable representing a non-financial factor for CSR in the form of work safety, 
\( \epsilon \) is the error term additively connected.

The multivariate regression model and its verification was conducted using statistical software Gretl. The final form of the model verified is presented in the section of research results.

3 Research results

When analysing the input sample data using the arithmetic mean, it was found that for the automotive sector the mean value of cost of debt is 10.5% and the mean value of cost of equity is 10.13%. The average value of the weighted average cost of capital is then 8.5%. The economic value added achieved rather negative figures in average absolute value of -55.94 mil. CZK. Based on the analysis, it is evident that large enterprises in the automotive industry do not create value, but rather decrease it. The following figure shows the average cost of financial resources of the business.

**Figure 6** Average cost value of the financial resources

![](image)

Based on obtained data and illustrated diagrams XY, a linear progression between regression model variables was expected. Furthermore, it was assumed that a policy of asset and capital structure management in the form of components of working capital, which were relatively expressed in sales, would show some dependence on EVA (whether positive or negative) and concurrently, elements of non-financial factors in the form of ISO 14001, representing environmental management as an element of social responsibility, would have a positive dependence. The resulting model is presented in the following table.

**Table 3** Model A

<table>
<thead>
<tr>
<th></th>
<th>Coefficient ( \beta )</th>
<th>Std. Error</th>
<th>( t )-ratio</th>
<th>( p )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const.</td>
<td>0.0741311</td>
<td>0.00601615</td>
<td>12.32</td>
<td>5.36e-025</td>
</tr>
<tr>
<td>Capital</td>
<td>-0.0935856</td>
<td>0.00216805</td>
<td>-43.17</td>
<td>2.04e-090</td>
</tr>
<tr>
<td>ROS</td>
<td>0.892298</td>
<td>0.00467498</td>
<td>190.9</td>
<td>1.25e-191</td>
</tr>
<tr>
<td>WACC</td>
<td>-0.884501</td>
<td>0.00264983</td>
<td>-18.89</td>
<td>1.10e-042</td>
</tr>
<tr>
<td>D_14001</td>
<td>0.00747528</td>
<td>0.00236856</td>
<td>2.821</td>
<td>0.0054</td>
</tr>
<tr>
<td>D_18001 OHSAS</td>
<td>-0.00155813</td>
<td>0.00194162</td>
<td>-0.8025</td>
<td>0.4235</td>
</tr>
</tbody>
</table>

Sum squared residual 445.1963 Standard. error of regression 1.662887
R-squared 0.999998 Adjusted R-squared 0.999998
F(4, 162) 17194492 P-value(F) 0.000000
Log-likelihood -318.8363 Akaikes criterion 649.6725
Schwarz criterion 668.3805 Hannan-Quinn 657.2657

Statistics based on the original data

Mean dependent var 0.343239 S.D. dependent var 4.821363

Source: Own processing
Table 1 shows the results of the model with corrected heteroskedasticity about the proposed methodology. Because of the violation of this classical assumption of the linear regression model, others classical assumptions were also violated. This problem of inhomogeneity of the error term was removed using a model with correct heteroskedasticity and the achieved results are given in Table 1 Model A.

The final model is statistically significant at the 1% level of significance and all its variables, except for the variable D_18001 OHSAS. In consequence of the use of the model with corrected heteroskedasticity, only the collinearity of explanatory variables and the normality of residuals could be tested. The tests show that there is no collinearity between variables and the residuals are not normally distributed. Model A explains 99.99% variability of the sample. It also indicates that the increase in ratio of capital and sales by one unit leads to the decrease of the economic value added by 9.35856%. On the contrary, the increase in return on sales by one unit leads to the increase in EVA by 89.2298%. The increase in the weighted average cost of capital by one unit leads to the decrease in EVA by 88.4501%. Dummy variable ISO 14001, as the example of implementation of environmental management, increases the economic value added by 0.747528%, which implies the desired state for value creation of analysed corporations. The introduction of variable D brings the opposite effect, representing the implementation of work safety, which decreases the EVA indicator by -0.155813%. It is therefore possible to believe that ownership of the certification standard ISO 18001 brings a negative effect on the economic value added of observed corporations, which is being destroyed. However, this result is not statistically significant. The following figure depicts the XY diagrams of individual input variables for multivariate regression analysis.

4 Conclusions

The modelling results confirmed the assumptions of the authors on the impact of the working capital management policies and the implementation of the ISO 14001 certification standards (representing environmental management) and ISO 18001 OHSAS (representing occupational safety) on the final value of economic value added EVA. The authors concluded that the negative correlation of ISO 18001 OHSAS is caused by higher costs related to the implementation of this certification standard and is also affected by a broad awareness of stakeholders who do not rather know about the ownership of this standard and do not pay much attention to it. This standard is also considered to be one of the youngest certification standard that corporations gradually introduce. About working capital management, the authors argue that in the automotive sector it is appropriate to implement a moderate policy of financing, in terms of the impact of changes on net working capital, by using long-term resources of the enterprise, which in turn will reduce the risk of financial structure and at the same time, it will reduce the costs of capital that correlates strongly negatively with economic profit. Since the impact of WACC on economic is more significant than the impact of larger amount of capital, the effect of proposed procedure on EVA indicator is positive.
The components of working capital confirmed a negative correlation between the ratio of capital ad sales and the economic profit at 1% significance level, which is decreased by the growth of this ratio. A similar negative impact occurred in the case of weighted average cost of capital, of which growth significantly reduces the economic value added of the enterprises analysed. On the contrary, return on sales, calculated using EBIT, confirmed a strong positive correlation on EVA indicator at 1% significance level, and therefore, it can be stated that the size of sales and EBIT significantly affect the economic profit.

About the impact of the implementation of environmental policy in the automotive industry on the economic value added, it was found that the ownership of the ISO 14001 standard causes high input costs in the form of investments, but its ownership is positively correlated with the economic value added and concurrently it reduces or eliminates the environmental impacts. This fact represents a very important effect for the automotive industry, since it positively contributes to the environmental area of CSR.

In the context of the research the assumption about the importance of non-financial factors in relation to economic profit was fulfilled. The authors recommend to implement moderate of net working capital management, since it has a positive impact not only on the risks associated with the business, but also on the economic profit. The ownership of certification standards ISO 14001 and ISO 18001 OHSAS, as representative elements of corporate social responsibility, increases not only the prestige of businesses, but also protects the environment, increase the occupational safety, initiate the innovation potential, and positively influence the economic value added. Based on the data obtained, future deeper research will be conducted to analyse the period, in which the standards ISO 14001 and ISO 18001 OHSAS were introduced, to understand the strength of its influence on the economic profit of businesses in different years.

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References


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