Using financial parameters to identify elements of creating and retaining maritime firms’ stakeholder value within the value in use concept

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ABSTRACT

The creation and retention of stakeholder value in the value in use concept are parts of modern business models oriented towards sustainable business, which depends on the entity’s ability to create stable cash flows. In order to be able to identify the parameters on which business processes depend and based on them create and preserve the value, it is important to analyses the financial parameters and their relationships. Therefore, within this research the authors analyses the financial indicators of maritime companies and brings them in relation with the creation and preservation of cash flow. Based on previous scientific research, the obtained results are brought into relation with prior identified qualitative factors associated with the creation and preservation of stakeholder value. The results showed that the proposed measurements: working capital, changes in non-cash working capital, return on equity (ROE), business excellence model (BEX), the index value creation (ex2), liquidity (ex3), return on assets (ROA) and capital turnover ratio, proved to be effective for testing the stability of cash flow, which is an important indicator of value creation.

1. Introduction

The concepts of sustainable business derive from business models whose main purpose is the creation and retention of value through different value concepts. The concepts of value in turn depend on the involved value users, and as such, can be defined as the stakeholder value concept i.e. one in which the value is created for the participants and by the participants of the business process, as a shareholder value concept, where value is created for capital providers or as the social value concept i.e. value for the whole society in which an firm operates. Creating value in the value in use concept can be observed through the ability to create a positive cash flow. Higher possibility of creating a positive cash flow is achieved through appropriately set strategies throughout the value network consisting of the management, employees, customers, suppliers, business partners, and society.

The value network or value chain efficiency depends on the quality of business processes defined by the quantity and quality of operational business methods.

Therefore, the various factors of the value process in business models are defined through the creation of internal business processes (Chesbrough, 2007) and their connection with external stakeholders in the value chain (Zott et al., 2011).

In recent years, scientific research regarding the creation and retention of value, are focused on different qualitative factors such as efficient market-oriented strategies (Gunther McGrath and MacMillan, 2000), brand loyalty and mostly intellectual capital. Namely, already in the late 1990s, some authors such as Edvinsson (1997), Sveiby (1997) and Lynn (1998), highlight the connection between intellectual capital and value creation, and present intellectual capital as the main source of value creation of the new economy. Therefore, the interest of the scientific and business community in the study of intellectual capital and innovation for this purpose is not surprising (Ze’ghal and Maaloul, 2010).

The value in use concept is observed through the value of benefits which a firm’s business activities bring to its owners in terms of achieving business results. This concept may be observed in several ways. The ones that
can are worth singling out are those by Brlečić Valčić and Crnković-Stumpf (2013). They view the value in use concept:

- as the present value of future cash flows that are expected to inflow from assets,
- as the value substance of a firm i.e. its reproductive value,
- as the economic value added, i.e. a concept that allows the firm to focus on its day-to-day operations which lead to the creation of firm value.

Since the analysis of individual elements’ impact on the creation and retention of a firm’s value is built on the analysis of the creation and retention of cash flows, this paper analyses the financial parameters that are brought in this connection for the purpose of identifying the elements of creating and retaining stakeholder value of maritime firms in the value in use concept.

2. The relationship between cash flow and value creation

For many years, financial theoreticians support arguments that the main objectives in decision making should be subject to the maximization of firm value (Damodaran, 2002). Such claims have often been criticized by firm management with arguments that this way of thinking does not represent the interests of all stakeholders.

However, in the recent years, the business strategies of successful firms are dedicated to sustainable business models oriented towards value creation. This primarily means setting operational performance in order to achieve satisfactory operating results, particularly cash flows.

The value may be viewed as a function of: 1) investments, 2) cash flow, 3) economic life, and 4) capital cost (Venanzi, 2012).

The generic model of firm value is brought into relation with the expected cash flows in the future (Damodaran, 2000), and value creation depends on the strategies of successful creation of sustainable cash flows. Therefore, all the modern techniques of determining the economic value of firms are oriented towards calculations of expected future cash flows.

The Free Cash Flow for the Firm (FCFF) measures the cash flow that remains free after paying all claim holders, creditors and capital investors, taxes and all reinvestment needs in the firm. Positive FCFF indicates that the firm is able to pay all required obligations arising from debt and equity (dividend), while a negative implies a deficit in free money that will have to be covered through additional borrowing or by issuing new shares (Brlečić Valčić, 2014). The free cash flow for the purpose of evaluation can be written as follows (Damodaran, 2006):

\[
\text{FCFF} = \text{EBIT} \cdot [1 - \text{(Tax Rate)}] - \left[\text{(Capital Expenditures)} - \text{(Depreciation)}\right] - \left(\text{Change in Non-Cash Working Capital}\right).
\] (1)

In order to create value from the financial aspect, the business activity has to do one or more of the following (Damodaran, 2000):

- increase the cash flows generated by assets in place currently,
- increase the expected growth rate in earnings,
- increase the length of the high growth period,
- reduce the cost of capital.

This certainly depends on a variety of factors that are not directly associated with financial indicators, such as good strategies, quality of management, intellectual capital, strength of brand name, quality of marketing etc.

However, value creation can be viewed through several processes that can be directly measured by certain financial indicators. Thus, for example, operational efficiency can be observed through the operating margin or operating profit, through a good tax policy in terms of all possible tax reliefs, through an optimal policy on net capital expenditures policy on assets in place etc.

Stable cash flows reflect the quality of corporate governance, especially in terms of preventing the appearance of financial diversification, which adversely affects the value of the firm (Castaner and Kavidis, 2013). Effective strategies for managing cash flows lead to improved firm financial performance (Kroes and Manikas, 2014).

3. Methodology

Based on the research results (Brlečić Valčić, 2014) which clearly indicate a significant connection of free cash flow for the firm (FCFF) and the following parameters: working capital (WC), changes in non-cash working capital, return on equity (ROE), business excellence model (BEX), value creation index (ex2), liquidity (ex3) and return on assets (ROA), the paper examines this approach for maritime firms.

Business processes and the effectiveness of a strategy aimed at achieving sustainable business performance is controlled by measuring individual listed indicators. Clear criteria to improve business processes can be established based on the comparison of these indicators across similar firms in the industrial environment. By determining the control and corrective measures with respect to the referent values, it is possible to monitor target achievements and incentive activities.

Working capital is a measure that is calculated by subtracting current liabilities from current assets, and in case of distortion, may significantly affect the firm’s cash flow. With the huge impact of price trends, one of the most influencing factors on working capital is certainly the development and expansion of capital investments. There are different methods of working capital management. They are built on different forms of business and operational models, relationships with customers, degree of vertical integration, the nature of the procurement and production...
contracts, and distribution infrastructure. Improvements in working capital management can be achieved through better control and management in the areas of inventory, assessment of demand, supply chain planning, debt collection, achievement of good trade conditions and better contracts with suppliers, especially in terms of making decisions to contract out individual business segments.

Firm's cash flow policies, which manage working capital in the form of cash receivables from customers, inventory holdings, and cash payments to suppliers, are inexorably linked to the firm's operations (Kroes and Manikas, 2014).

Instead of observing just the standard working capital, in the context of value creation, it is important to observe the non-cash working capital as well. Since, the money invested in non-cash working capital is tied and cannot be used elsewhere, an increase in the non-cash working capital is viewed as cash outflows, whereas its decrease as cash inflows.

Changes in non-cash working capital from year to year tend to be volatile. Therefore, when in the assessment of future working capital needs, in order to have stable cash flows, it is necessary to monitor the ratio of non-cash working capital and revenue. Reduced non-cash working capital, as a percentage of revenue, should increase cash flows and thus the value (Damodaran, 2000).

Optimal asset-liability management contributes to the matching of cash flows and maximization of value creation (Decamps et al., 2009). The monitoring and comparison of the efficiency level of individual business activities can be done by bringing into relation the total non-cash current assets (accounts receivable, stocks and prepaid expenses) and revenue during the observed period, or individual current assets items and revenue. In this manner, by calculating the industry average one can get a clear picture of the quality of individual business processes and compare firms within the business environment. In the same way total current liabilities or individual items may be brought into relation to sale.

The most commonly used ratio to show the return on owner's investment, defined as the ratio of net profit and capital, is the Return on Equity (ROE) (Pratt and Niculita, 2008):

$$\text{ROE} = \frac{\text{Net Income}}{\text{Shareholder’s Equity}}$$ (2)

ROE is associated with the creation of intellectual capital (Komnenić and Pokrajčić, 2012), which is an essential factor in the creation and retention of a firm's value. Thus, deviations in this indicator can be linked to (mis)management of intellectual capital.

The average value of this indicator for large firms that are publicly traded on stock exchanges is between 11 and 13% (Palep and Healy, 2008). On the other hand, the Return on Assets (ROA) (Palep and Healy, 2008), defined as:

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Assets}}$$ (3)

demonstrates the effectiveness of the governance in the management and use of assets. All values above 5% are considered satisfactory (Helfert, 2005).

The links between ROA and intellectual capital have been established in various studies (Riahi-Belkaoui, 2003; Komnenić and Pokrajčić, 2012). Moreover, other qualitative factors important for the creation and retention of value, such as effective strategies (Jensen and Zajac, 2004) and the value of the brand which affects future operating results of the firm (Li Eng and Tat Keh, 2007) can also be brought into relationship with ROA.

The Business Excellence Model (BEX) is suitable for measuring value creation, not only because of the proven links with the FCFF (Brlečić Valčić, 2014), but also because it is designed to measure current and future business excellence of firms and industry groups. Similar models designed exclusively for measuring potential risks of serious financial distortions are also important in the measurement of the potential for the creation and retention of sustainable value, especially in the analysis of financial leverage that may have an impact on growth opportunities (Iturriaga and Crisostomo, 2010). The BEX index overcomes this issue and measures business excellence and thus is more in suitable in this context.

It is defined through four indicators with specific weight impacts according to the following formula (Belak, 2014):

$$\text{BEX} = 0.388 \cdot \text{ex1} + 0.579 \cdot \text{ex2} + 0.153 \cdot \text{ex3} + 0.316 \cdot \text{ex4},$$ (4)

where ex1 represents a measure of profitability, ex2 measure of value creation, ex3 measure of liquidity, and ex4 measure of financial strength. These indicators are defined by:

$$\text{ex1} = \frac{\text{EBIT}}{\text{Total assets}}$$ (5)

$$\text{ex2} = \frac{\text{Net Income after Tax}}{\text{Shareholder Equity} \cdot \text{Price}}$$ (6)

$$\text{ex3} = \frac{\text{Working Capital}}{\text{Total assets}}$$ (7)

$$\text{ex4} = \frac{5 \cdot (\text{Profit} + \text{Amortization} + \text{Depreciation})}{\text{Total Liabilities}}$$ (8)

The marginal value of business profitability (6) is 6.675% EBIT over total assets.

Measuring value creation is based on economic profit, i.e. profit that exceeds the cost of capital, in which the cost of shareholder equity implies the result of multiplying shareholder equity and the potential profit for owners from alternative, relatively risk free investments. If ex2 in (6) is larger than one, the firm creates value, and if it less, the firm "eats" its substance.

The marginal value of liquidity (7) is 25% of working capital in relation to total assets.
The indicator ex4 in (8) is based on the relationship between theoretically free cash from all activities, which is net profit plus amortization, depreciation after covering all liabilities. The standard liabilities coverage with free money is 20%. This measure applies to the shortest period (5 years) in which the observed firm has to cover due liabilities with free money. If the firm covers its obligations with free money in a period shorter than 5 years, the indicator ex4 shows progressive growth.

According to BEX index values in (4), firms are divided into:
- excellent firms – BEX index above 4,
- very good firms – BEX index between 2 and 4,
- good firms – BEX index above 1,
- firms in need of business improvement – BEX index between 0 and 1, and
- firms whose existence is endangered – BEX index below 0.

From the above mentioned, it can be concluded that a higher indicator of business excellence means better quality of business processes within the business models oriented towards value creation, while a lower indicator implies the need for greater investment in business processes. Therefore, the BEX index is a suitable measure for determining the level of needed investments in the business processes and the amount of value retention to enable value creation.

4. Results

The study analyses the financial results and calculates indicators based on these results for 33 very large maritime firms in Europe, mainly from Norway, for the period from 2008 to 2013. The selected period coincides with the economic crisis, and the obtained results indicate changes in business policies and methods of asset management, especially in terms of cash and cash equivalents. The data were collected from the Amadeus database (Amadeus, 2015). The main criteria for the selection of data were:
- Standardised legal form: Public limited companies, Private limited companies,
- NACE Rev. 2 (Primary codes only): 502 – Sea and coastal freight water transport,

The selected firms for analysis, shown in Table 1, were ranked according to their earnings in the last observed year i.e. 2013.

The average values for all observed parameters during the observed period are presented in Figure 1. The parameters were analysed for each individual year, and for two consecutive years as presented in Table 2.

The first observed indicator is the Return on Equity (ROE), and the average returns show that the impact of the crisis on the results in the sector was at its strongest in 2010 and 2011, when the returns on equity dropped to levels around 0. The average returns on equity, ranged between around 16% before the crisis, to 8% in 2010, 0% in 2011, 7% in 2012, and again 16% in 2013. The total average for the observed period is 7.43%.

The analysed values indicate that the use of intellectual capital and management’s effectiveness contribute to value creation and retention, and the transformation of inefficient management policies into those sustainable and stable.

The second indicator, the ROA, was also the lowest in the period 2010–2011 and became stable in 2012–2013. It is indicative that the higher ranked firms had less fluctuation in the return on assets than those ranked lower. The ROA ranged from 6% in 2008 to 1.3% in 2010 and then rose again to 6% in 2013. The average ROA value for the observed period is 3.46%.

The analysis of ROA confirms the conclusions found in the ROE analysis, that most of the firms consciously turned their management policies towards stability and sustainability, which again indicates the use of intellectual capital and management’s effectiveness.

Shareholder value creation analysed based on ex2, was the lowest at -0.27% in 2011, and did not show signs of recovery in the observed period. The highest value of 5.44% was recorded in 2008. The average value in the observed period was 1.81.

The FCFF indicator ranged from extremely negative values in 2008, suggesting that the firms had an investment swing and were borrowing to finance their activities, to the stabilization of cash flow in 2013. Therefore, it can be concluded that firms have in general changed their cash management policies and by changing their investment policies reduced their need for borrowing. Almost the same tendency may be seen in the relationship between FCFF and revenues, ranging from -7.6% in 2008, up 0.55% in 2013. Cash management policies show a similar tendency to change in all analysed groups of firms. The non-cash working capital did not show bigger changes in the period 2008–2011. The firms reduced the value of non-cash capital in order to achieve savings and rationalize their operations only after the re-stabilization of business in 2012–2013.

This same may be seen in the analysis of the ex3 indicator which shows that the average value ranged below the marginal value in the first years of the global economic crisis, and that it recorded a slight increase in the last observed years.

Significant changes in the sector can be seen in changes in the BEX index, falling from the very good 3.45 in 2008 to the cautious 0.58 in 2013. The fall of the BEX index is more present in lower ranked firms.

The BEX index of lower ranked firms before the crisis was rather high and encouraged their development policy. Their financial results and their policy of financing by borrowing resulted in higher indices. At the peak and upon the...
Table 1 The list of analysed maritime firms with country ISO codes and primary business lines

<table>
<thead>
<tr>
<th>Company name</th>
<th>Country ISO code</th>
<th>Primary business line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laco AS</td>
<td>NO</td>
<td>Seafood, shipping and other marine activities</td>
</tr>
<tr>
<td>Bonheur ASA</td>
<td>NO</td>
<td>Engaged in the management activities of a holding company</td>
</tr>
<tr>
<td>CMA CGM</td>
<td>FR</td>
<td>Engaged in the provision of international shipping transport</td>
</tr>
<tr>
<td>Awilhelmsen Holding AS</td>
<td>NO</td>
<td>Engaged in the provision of services</td>
</tr>
<tr>
<td>Awilhelmsen AS</td>
<td>NO</td>
<td>Primarily engaged in the provision of sea freight transportation services</td>
</tr>
<tr>
<td>Meteva AS</td>
<td>NO</td>
<td>Provision of a full range of water transportation services</td>
</tr>
<tr>
<td>Walleniusrederierna Aktiebolag</td>
<td>SE</td>
<td>Engaged in the provision of sea transport services</td>
</tr>
<tr>
<td>Rederi Aktiebolaget Soya</td>
<td>SE</td>
<td>Primarily engaged in providing shipping transport services, and deep sea transportation of passengers and cargo</td>
</tr>
<tr>
<td>GC Rieber AS</td>
<td>NO</td>
<td>Engaged in the supply of fish oil, production and supply of sealskin, production and distribution of salt, real estate, and shipping activities</td>
</tr>
<tr>
<td>Solstad Offshore ASA</td>
<td>NO</td>
<td>Engaged in the operation of vessels and the provision of services to oil related offshore activities</td>
</tr>
<tr>
<td>Ships AS Tudor</td>
<td>NO</td>
<td>Engaged in the development, sale and leasing of real estate</td>
</tr>
<tr>
<td>Volstad Maritime AS</td>
<td>NO</td>
<td>Engaged in seismic exploration and offshore IRM and construction</td>
</tr>
<tr>
<td>Farstad Supply AS</td>
<td>NO</td>
<td>Engaged in sea and coastal water transport activities</td>
</tr>
<tr>
<td>Barentz AS</td>
<td>NO</td>
<td>Engaged in the provision of freight ocean transportation services</td>
</tr>
<tr>
<td>Bourbon Ships AS</td>
<td>NO</td>
<td>Engaged in sea and coastal water transport</td>
</tr>
<tr>
<td>Farstad Shipping ASA</td>
<td>NO</td>
<td>Supplier of large, modern offshore support vessels</td>
</tr>
<tr>
<td>Eidevik vi Shipping AS</td>
<td>NO</td>
<td>Engaged in sea and coastal water transportation, specializing in deep sea freight transportation</td>
</tr>
<tr>
<td>Solstad Rederi AS</td>
<td>NO</td>
<td>Engaged in sea and coastal water transportation, specializing in deep sea freight transportation</td>
</tr>
<tr>
<td>Bourbon Offshore Norway AS</td>
<td>NO</td>
<td>Engaged in the provision of maritime support services for the offshore oil and gas industry</td>
</tr>
<tr>
<td>TS Shipping Invest AS</td>
<td>NO</td>
<td>Engaged in sea and coastal water transport</td>
</tr>
<tr>
<td>Seglem Holding AS</td>
<td>NO</td>
<td>Primarily involved in the provision of sea and coastal water transport services to its clients</td>
</tr>
<tr>
<td>Rem Offshore ASA</td>
<td>NO</td>
<td>Engaged in the operation of offshore service vessels</td>
</tr>
<tr>
<td>Olympic Holding AS</td>
<td>NO</td>
<td>Operates as a holding company whose subsidiaries are engaged in the leasing of real estate properties</td>
</tr>
<tr>
<td>Cobelfret Ferries</td>
<td>BE</td>
<td>Engaged in the provision of transportation services</td>
</tr>
<tr>
<td>Boa Ocv AS</td>
<td>NO</td>
<td>Engaged in providing sea and coastal water transportation services</td>
</tr>
<tr>
<td>Rederialejeselskapet Torvald Klaveness</td>
<td>NO</td>
<td>Owns and operates cargo vessels for governments, oil companies, industrial companies, traders, and individuals</td>
</tr>
<tr>
<td>Rem Ship AS</td>
<td>NO</td>
<td>Owner and operator of modern and large offshore service vessels</td>
</tr>
<tr>
<td>Olympic Ship AS</td>
<td>NO</td>
<td>Offshore shipping and fishing company which is involved in various offshore activities in the North Sea</td>
</tr>
<tr>
<td>Gulmark Rederi AS</td>
<td>NO</td>
<td>Engaged in the provision of marine transportation services in Norway</td>
</tr>
<tr>
<td>J.I. Ugland Holding A/S</td>
<td>NO</td>
<td>Engaged in providing sea and coastal water transport services</td>
</tr>
<tr>
<td>Gulmark Norge AS</td>
<td>NO</td>
<td>Engaged in the provision of marine transportation of freight services</td>
</tr>
<tr>
<td>Havila Hoking AS</td>
<td>NO</td>
<td>Engaged in sea and coastal water transport</td>
</tr>
<tr>
<td>Deepocean Shipping IV AS</td>
<td>NO</td>
<td>Engaged in the provision of subsea and marine support vessels and services, including subsea trenching and protection services</td>
</tr>
</tbody>
</table>

Source: Prepared by authors according to (Amadeus, 2015)

Table 2 Mean values of selected ratios during 2-year periods

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>FCFF/revenue</td>
<td>-4.02</td>
<td>0.00</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>(Non-cash WC)/revenue</td>
<td>0.50</td>
<td>0.12</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>8.09</td>
<td>3.13</td>
<td>11.01</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>4.35</td>
<td>1.08</td>
<td>4.96</td>
<td></td>
</tr>
<tr>
<td>ex2</td>
<td>3.49</td>
<td>1.10</td>
<td>0.84</td>
<td></td>
</tr>
<tr>
<td>ex3</td>
<td>0.02</td>
<td>0.02</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>BEX</td>
<td>2.85</td>
<td>0.79</td>
<td>0.93</td>
<td></td>
</tr>
</tbody>
</table>

Source: Prepared by authors
financial crisis, the results of these firms due to their borrowing policies was under increasing pressure, operating results were worse, and the BEX index shows significant fall. The average BEX index for the observed period is 1.53.

An individual firm’s business processes and the effectiveness of its strategies in achieving sustainable business can be analysed through all specified parameters by observing its individual results in relation to the reference value and in relation to the industry’s average for the observed year(s).

5. Conclusion

The paper presents important elements in the creation and retention of stakeholder value in the value in use concept. Based on previous research the factors influencing the stability of cash flow were analysed in the context of maritime firms. The possibility of creating values in the value in use concept also present the possibility of creating positive cash flows in a value network through increased quality of business processes and operating business methods.

Research results indicate the parameters: working capital, changes in non-cash working capital, return on equity (ROE), business excellence model (BEX), the index value creation (ex2), liquidity (ex3) and return on assets (ROA) may be used in determining the stability of cash flows and thus the creation and retention of value.

Financial indicators are brought into relation with the qualitative factors on which the value creation in the value in use concept depends. The conducted analyses prove that the proposed measurements may be used to assess business processes and the effectiveness of strategies in achieving sustainable business, as well intellectual capital and the effectiveness of the management.

In the future, in order to obtain more in-depth results, the relation between parameters of qualitative nature impacting value creation and retention and the financial parameters significant for creating and retaining cash flows. Moreover, it is necessary to analyse other business indicators that may influence business stability and cash flow. As this paper analyses only very large firms, a similar future analysis should address large and medium size firms and other industries.

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