IMPACT OF LOGISTICS MANAGEMENT AND SUPPLY CHAIN STRATEGY ON SHAREHOLDER VALUE

Marko Miljković [a], Jelica Petrović-Vujačić [a]

[a] University of Belgrade, Faculty of Transport and Traffic Engineering, Serbia

Abstract: *There are many different ways for measuring corporate effectiveness and efficiency. One of the most important contemporary approaches to this issue is a stakeholder approach. The most important stakeholder group of a corporation includes its shareholders, and they estimate corporate efficiency primarily by financial results. Shareholder value can be defined as net present value of future free cash flows, which can be calculated as cash flows from operations minus capital expenditures minus changes in net working capital. Factors of such defined shareholder value are numerous, but the most important ones include revenue growth, operating cost reduction, fixed capital efficiency, working capital efficiency and tax minimization. Logistics management and supply chain strategy of corporations are among key driving forces of shareholder value and the subject of this paper is related to their impact on key factors of shareholder value.*

Keywords*: shareholder value, logistics management, supply chain strategy, free cash flow.*

1. INTRODUCTION

Concepts of effectiveness and efficiency are essential for every company. These concepts link the company's goals with the resources used to achieve these goals. Thereby, effectiveness can be defined as the ability of a company to acquire the appropriate resources and use them to achieve the goals. On the other hand, efficiency can be expressed by relation between outputs and inputs, i.e. as the ability of a company to maximize its outputs or minimize its inputs. Effectiveness relates to the achievement which the company set out to achieve, while efficiency relates to the ratio of outputs to inputs (Wilson and McHugh, 1987). If a company is effective, that means that it is doing the right things, while an efficient company is doing the things right.

There are many different ways for measuring corporate effectiveness and efficiency. Daft (1992) summarized the traditional approaches to this issue, which include approaches focused on achievement of goals, on ability for acquisition of resources and on internal processes. Therefore, effectiveness and efficiency can be evaluated by the level of realization of company's objectives, by company's ability to acquire scarce and valuable resources from the environment, as well as by the state of internal environment and efficiency of internal processes which transform inputs into outputs.

A common characteristic for all aforementioned traditional approaches refers to their partiality, i.e. to their focus on only one phase in the process of creation of value added. On the other hand, many new contemporary methodologies developed a more complex approached for measuring corporate effectiveness and efficiency. These approaches respect the fact that each company has various goals and that all companies use numerous resources to achieve their goals. Therefore,

new methodologies try to combine different indicators of efficiency in order to measure it. One of the most important and most commonly used contemporary approach for measuring effectiveness and efficiency is a stakeholder approach. This approach explains the behaviour of companies in the best way and identifies the most important factors which determine the efficiency and effectiveness of companies (Blazek and Castek, 2009).

In the following chapters, the paper's focus is on stakeholder approach, i.e. on shareholder value, which represents a key indicator of the level of owners' satisfaction. Furthermore, the paper investigates how logistics management and supply chain strategy can contribute to increase shareholder value.

2. STAKEHOLDER APPROACH FOR MEASURING EFFECTIVENESS AND EFFICIENCY

Stakeholder approach is based on measuring the level of satisfaction of different stakeholder groups which include owners, managers, employees, customers, creditors, society, suppliers, authorities and many others. Each stakeholder group evaluates effectiveness and efficiency by comparing what they get from the company with what they invest in the company. Owners, for example, evaluate effectiveness and efficiency by financial results, employees by working conditions and level and dynamics of wages, customers by quality of products and services, creditors by company's ability to service its debt, society by company's contribution to solving social problems and level of social responsibility, suppliers by regularity of payments and satisfactory transactions, government by compliance with law and rules, tax obligations etc. (Jones, 2001).

Table 1. Stakeholder groups and appropriate indicators of effectiveness and efficiency

Stakeholder group	Indicators of effectiveness and efficiency
Owners	Financial results
Employees	Satisfaction of employees, wages
Customers	Quality of products and services
Creditors	Credit rating
Society	Contribution to solving social problems
Suppliers	Satisfactory transactions
Authorities	Compliance with law and rules

At the very beginning, stakeholder approach suggests identification of key stakeholder groups for the company and key goals of each stakeholder group. Beyond doubt, owners and in some cases managers, when the managerial function is separated from the ownership function, represent the most important stakeholder group. Carpenter et al. (2015) give at least three reasons for superiority of owners and managers:

- Influence as either originator or steward of the company's mission and vision;
- Responsibility for formulating a strategy that realizes the mission and vision;
- Ultimate role in strategy implementation.

What is company worth to its owners, can be measured by a concept of shareholder value. Shareholder value can therefore be defined as a key measure of corporate performance and is determined by the net present value of future free cash flows. It is very important to make a distinction from profit, which is a difference between revenues and expenditures and does not

take accounts payable and accounts receivable into consideration. On the other hand, shareholder value, measured by free cash flows, refers to the money remaining after all supplier bills have been paid, all outstanding payments owed by buyers have been collected, and all money needed for investments has been accounted for. What is left, must therefore be free, i.e. distributable among all the investors, whether they are shareholders or debtholders.

In the next chapter, the financial concept of shareholder value, as well as key driving forces of shareholder value are presented.

3. FINANCIAL CONCEPT OF SHAREHOLDER VALUE AND ITS KEY DRIVERS

Free cash flow (*FCF*) is consisted of three important components:

- Cash flow from operations (*CFO*);
- Capital expenditures (*CAPEX*);
- Change in net working capital (*ΔNWC*).

Cash flow from operations (*CFO*) refers to the cash flows generated by the on-going operation of a company and can be calculated in the following way:

$$CFO = NOPAT + A + D \tag{1}$$

Where A represents amortization, D depreciation and $NOPAT$ net operating profit after tax, which can be calculated as:

$$NOPAT = EBIT * (1 - t) \tag{2}$$

Where *EBIT* represents earnings before interests and taxes, and t is the tax rate.

Earnings before interests and taxes (*EBIT*) refers to all the benefits that a company has created before distributing to debtholders in the form of interests, to the government in the form of taxes, and to the shareholders in the form of profit. Since the government is only a stakeholder and not an investor, net operating profit after tax (*NOPAT*) reflects the benefits created that are distributable to the only investors of the company – the debtholders and the shareholders. Amortization and depreciation have to be added back because they do not necessary mean cash outflow and not adding back these categories would mean counting these costs twice.

Capital expenditures (*CAPEX*) refer major cash outflows for buying new fixed assets and equipment, or cash inflows from sale of equipment.

Net working capital is money that is necessary for keeping the operation going. It represents the money tied up in the operation, without which company would not be able to reach the desired results. Change in net working capital (*ΔNWC*) can be calculated in the following way:

$$\Delta NWC = (CA_t - CL_t) - (CA_{t-1} - CL_{t-1}) \tag{3}$$

Where *CA* refers to current assets, *CL* current liabilities and t refers to time dimension.

An important consideration for working capital is that since working capital is simply capital that is working for the operation, it will be able to recover all the outstanding working capital at the end of the project.

Finally, free cash flow can be expressed by the following formula:

$$FCF = CFO - CAPEX - \Delta NWC \tag{4}$$

As we already emphasized, shareholder value can be identified as net present value of future free cash flows of the company. In order to be calculated, all future free cash flows have to be discounted by appropriate discount rate, which is usually average interest rate on the market. Therefore, shareholder value (*SV*) amounts to:

$$SV = \sum_{t=1}^{n} \frac{FCF_t}{(1+i)^t} \tag{5}$$

Where i refers to interest rate, and t to time dimension.

Christopher (2010) identified five key drivers of such defines shareholder value (Figure 1):

- Revenue growth;
- Operating cost reduction;
- Fixed capital efficiency;
- Working capital efficiency;
- Tax minimization.

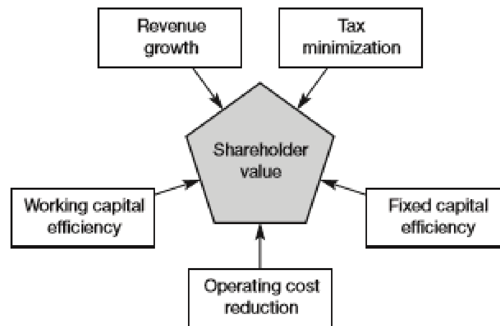

Figure 1. The drivers of shareholder value

Revenue growth has a positive impact on net operating profit after tax, which is a component of cash flow from operations. Operating cost reduction, as well as tax minimization, also impact net operating profit after tax. On the other hand, fixed capital efficiency means that a company can achieve better results by using less fixed capital, and improvement of fixed capital efficiency directly impacts capital expenditures. Working capital efficiency means that a company achieves better results by using less net working capital, and improvement of working capital efficiency therefore means positive impact on changes in net working capital.

Srivastava et. al. (1998) suggested that corporate strategies should be evaluated in terms of how they either enhance or accelerate cash flow (Figure 2).

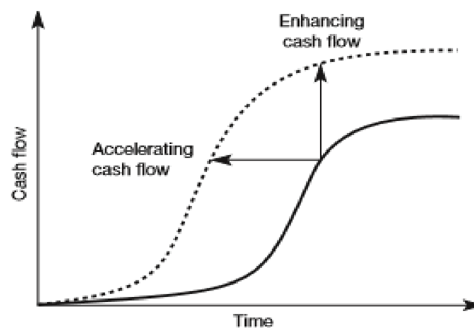

Figure 2. Changing the cash flow profile

4. LOGISTICS MANAGEMENT AND SUPPLY CHAIN STRATEGY AS DRIVING FORCE FOR SHAREHOLDER VALUE

Logistics management and supply chain strategy can have considerable impact on each driver of shareholder value and thereby represent a very important determinant of shareholder value. There are various channels for such an impact of logistics.

Primarily, logistics services have a strong impact on sales volume and customer retention. Cristopher and Ryals (1999) presented results of different studies indicating a positive causality between logistics service and sales. They emphasize that more reliable and responsible logistics service can strengthen the likelihood that customers will remain loyal to a supplier, and the higher levels of customer retention lead to greater sales, while revenue growth is among key drivers of shareholder value.

Furthermore, logistics and supply chain management possess a significant potential for reduction of operating costs. A large proportion of operating costs of a company (including transportation, storage, handling and order processing costs etc.) is often driven by logistics decisions and the quality of supply chain relationships. Cristopher and Ryals (1999) recognized that time compression in the supply chain can significantly reduce costs through the reduction of non-value-adding activities. Bearing in mind that operating cost reduction is also among key drivers of shareholder value, logistics and supply chain management can impact shareholder value also through this channel.

Logistics activities are often fixed capital intensive. For example, investment in transport vehicles and distribution centers needs high amounts of money and often negatively impact the overall return on investment rate. Therefore, instead of significant fixed investment, management can decide to use services from the third-party logistics service sector, and thereby decrease investment in fixed assets. In this way, logistics management can have significant positive impact on shareholder value through the channel of fixed capital efficiency.

Supply chain strategy and logistics management can also realize their impact on shareholder value through the channel of working capital efficiency. Namely, logistics is also fundamentally linked to the working capital requirement within the business. These requirements can be significantly decreased by time compression and by reduction of non-value-adding time in the supply chain, as Christopher (2010) noticed.

Furthermore, companies that are operating on international markets need to include even more elements in their assets allocation decision. Tax regimes are becoming one of the most important factors for choosing where to locate production or service centers for multinational companies. Differences in tax regimes can be so vast that they tip the balance from profit to loss. In that sense, it is not just the corporate tax rate that makes the difference, but also customs regulation, environmental taxes, different duty on fuel and energy and other rules that are even more differentiated among the countries. Every time when large global company have production and service facilities in different countries with dispersed distribution centers, total tax expenditures will largely depend on supply chain decisions. Therefore, these decisions will also influence shareholder value.

5. CONCLUSION

Achieving effectiveness and high level of efficiency is an ultimate goal of every corporation. Nowadays, a widely accepted approach for measuring company's effectiveness and efficiency is a stakeholder approach, which measures the satisfaction of all stakeholder groups of a company. Beyond doubt, owners represent the most important stakeholder group and they evaluate company's effectiveness and efficiency by financial results, and by dynamics of shareholder value. Shareholder value can be defined as net present value of all future free cash flows, which include cash flows from operations minus capital expenditures minus changes in net working capital.

There are many factors which determine the level and dynamics of such defined shareholder value. Among key driving forces, there are revenue growth, operating cost reduction, fixed capital efficiency, working capital efficiency and tax minimization. Logistics management and supply chain strategy of corporations are among key driving forces of shareholder value.

Logistics have a strong impact on customer retention and thereby on sales volume. Logistics and supply chain management possess also a significant potential for reduction of operating costs, having in mind that large part of operating costs is often driven by logistics decisions. Logistics decisions, like time compression in the supply chain and reduction of non-value-adding activities can achieve positive impact not only on reduction of operating costs, but also on improvement of working capital efficiency. Furthermore, location decisions in global logistics have significant impact on tax expenditures and thereby on shareholder value, as well.

ACKNOWLEDGMENT

This research was supported by the Ministry of Science and Technological Development of the Republic of Serbia through the project TR36006.

REFERENCES

[1] Blazek, L., Castek, O. (2009). Stakeholder Approach and the Corporate Financial Performance. Review of Economic Perspectives 9(2), 91-106.

[2] Carpenter, M., Bauer, T., Erdogan, B. (2015). Principles of Management. University of Minnesota Libraries Publishing.

[3] Christopher, M. (2010). Logistics and Supply Chain Management. Prentice Hall.

[4] Christopher, M., Ryals, L. (1999). Supply Chain Strategy: Its Impact on Shareholder Value. The International Journal of Logistics Management, 10(1), 1-10.

[5] Daft, R.L. (1992). Organizational Theory and Design. West Publishing Company, St. Paul.

[6] Jones, G.R. (2001). Organizational Theory: Text and Cases. Prentice Hall.

[7] Kousenidis, D.V. (2006). A Free Cash Flow Version of the Cash Flow Statement: a Note. Managerial Finance, 32(8), 645-653.

[8] Srivastava, R.K., Shervani, T.A., Fahey, L. (1998). Market-Based Assets and Shareholder Value: A Framework for Analysis. Journal of Marketing, 62(1), 2–18.

[9] Wilson, M.S.R., McHugh, G. (1987). Financial Analysis – a managerial introduction, Cassell Education Limited, London.