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EVOLUTION OF VALUE BASED PERFORMANCE MEASUREMENT TOOLS

Abstract
Performance evaluation plays a vital role in assessing the true reflection of companies’ financial and non-financial positions since such system consists of both financial and non-financial benchmarks. While non-financial measures are habitually taken into account by a balanced scorecard system, financial ones, however, has gone through a perpetual evolution period over the years. Results of an evaluation will reveal the capabilities and the deficiencies of companies in terms of providing evidence whether the company seems to be sustainable or is in jeopardy. The aim of this paper is to thoroughly expound the evolution process of value based performance measurement tools specifically focusing on return on investment, residual income, and finally economic value added.

Keywords: Performance Evaluation, Return on Investment, Residual Income, Economic Value Added

DEĞER TABANLI PERFORMANS ÖLÇÜM ARAÇLARININ GELİŞİMİ

Özet
Perfomans değerlendirme, hem finansal hem de finansal olmayan kriterlerden oluşmasından dolayı, işletmelerin finansal ve finansal olmayan durumlarının gerçek yansımasını ölçmek adına hayatı önemli taşımaktadır. Finansal olmayan ölçütlər genellikle dengeli karne ve benzeri araçlar ile ölçülmekteyken; finansal kısımları ölçümde sürekli bir gelişime rastlanılmaktadır. Yapılan bir değerlendirmenin sonuçları, işletmenin sürekliliği veya içinde bulunduğu tehlike açısından kабiliyet ve zayıf yönlerinin meydana çıkmasını sağlayacaktır. Bu çalışmanın amacı, özellikle yatırım karlılığı, artık kar metodu, ekonomik katma

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Evolution of Value Based Performance Measurement Tools

değer üzerinde odaklanarak değer tabanlı performans ölçüm araçlarının gelişimini etrafıca irdelemektir.

Anahtar Kelimeler: Performans Değerlendirme, Yatırım Karlılığı, Artık Kar Metodu, Ekonomik Katma Değer

1. INTRODUCTION

In today’s globalized world, companies are challenged with major changes and developments due to the rapid increase of economic development. Traditional financial performance metrics, including earnings per share, return on assets, return on equity, net operating income, earnings before interest and taxes, or earnings before interest, taxes, depreciation and amortization, are insufficient in making strategic decisions (Grant, 2003; Becerra, 2009). Moreover, they do not give complete and reliable answers to these questions related to the financial objective: Does the business plan create value for the company? Does each division create value? (Rappaport, 1981; Aggarwal, 2001; Becerra, 2009)

In terms of strategic financial management, calculating the appropriate value of a company and also managing this value are important issues. When shareholders become a partner of a corporation, they want to achieve the highest return according to the risk they undertake. In this context, first of all, the main point is to evaluate firm value correctly. In addition, effectively managing this value is essential and it is also necessary in order to maximize the overall firm value with respect to shareholders (Rappaport, 1981; Aggarwal, 2001). Therefore, with the impacts of increased competition and globalization, companies have been trying to increase the value of their firms using the scarce sources. Value based management approaches have emerged as a revolutionary tool to not only measure firm value by considering the costs of both external and internal sources but also enhance value creation.

Value based management approaches, such as return on investment, residual income, and economic value added, have been started to use because of the increasing necessity for measurement indicators to measure the actual profit and performance of companies. These measurement tools enable businesses to properly allocate the resources, benchmark their performance with other businesses and focus on investment decisions by emphasizing on the cost of capital. The purpose of this paper is to introduce value based performance measurement tools which are return on investment, residual income, and economic value added. Further, it is aimed to explain history, calculation, advantages and disadvantages of these measurement tools.

2. LITERATURE REVIEW

2.1. Return on investment

One of the most widely used financial measures is return on investment (ROI). At present, ROI has been frequently called as DuPont System because DuPont was the first to use ROI in order to manage and assess their operations (Dearden, 1969; Garrison et al., 2011). ROI is used to determine overall corporate performance in terms of profits (Zimmerman, 2000). Besides, when managers evaluate the performance of a department or a division or a project, they generally use the ROI term (Karahan, 2011). It is the simplest way to measure the profitability of projects. It combines an investment of a program (the cost) with a number of gains (the profit) and it is generally defined as a cost/profit ratio or percentage (Phillips and Phillips, 2001; Botchkarev and Andru, 2011).
income (profit) / investment x 100 = percentage ROI

(De Vos and Walker, 1968).

When using profit and amount of investment to calculate ROI, companies complete these in different forms. For example, some firms use the figures of operating profit or others use the figures of net profit in the calculation of ROI. Some firms use total assets as the amount of investment when others use the amount of total assets minus short-term liabilities (Karahan, 2011). Lastly, ROI is also computed by operating profit (net operating income) over average operating assets. In general, this formula is useful to determine the distribution of total sources among departments (Garrison et al., 2011).

ROI = Net operating income / Average operating assets

(Garrison et al., 2011).

As seen from the above equation, if a company’s ROI is greater than other businesses, the profit earned from the invested capital in the operating assets is higher than the others. In the numerator of ROI formula, net operating income, which is income before interest and taxes or occasionally earnings before interest and taxes, is employed rather than net income, due to the fact that the denominator is composed of operating assets (Garrison et al., 2011).

ROI has some benefits. First of all, it forces managers to consider the relationship between investments, sales, and expenses. Additionally, it increases the effectiveness of cost. Finally, it prevents the unnecessary investments to be made to assets (Karahan, 2011; Wheelen and Hunger, 2012). Furthermore, ROI is used for firm performance evaluation because of its several advantages. Firstly, ROI includes all the expenses, revenues as well as costs, so it is a comprehensive and single figure. Then, performance of investment centers can be assessed by ROI. Further, comparison across firms can be done by ROI in order to find out which companies are achieving better profitability. Finally, ROI leads businesses to utilize current assets effectively and to gain new assets if they would raise profits prominently (Wheelen and Hunger, 2012).

Even though ROI is commonly used in determining a corporation’s performance, there are some significant criticisms as well. Firstly, ROI is an absolute number and the reality may not exactly be reflected by ROI, therefore such ratio has the potential to mislead managers into making unhealthy investment decisions. Secondly, ROI is also influenced by the depreciation policy of the company where accumulated depreciation causes net assets to reduce and ROI to increase. Thirdly, ROI is not used when comparing across industries performing under distinct conditions. Fourthly, ROI may lead managers about some investments which could in fact increase profit figures but could reduce the ROI as well. Moreover, ROI leads managers to ignore the future as a cause of short-term thinking about the expenses’ benefits that could be acquired in the long term. Then, in terms of investment decisions, ROI encourages managers who are evaluated and rewarded by only ROI to act just in their own interests rather than the interests of all the company. Furthermore, the overall economy affects ROI, so when there is prosperity, its tendency is being higher or when there is a recession, its tendency is being lower.
Lastly, the idea of precision and objectivity is given by ROI, but the manipulation of ROI can be simply done (Mechlin and Berg, 1980; Garrison et al., 2011; Matalonga and Feliu, 2012; Wheelen and Hunger, 2012).

2.2. Residual income

Residual income (RI) is a method measuring the accounting performance of an enterprise. Since the popularity of ROI diminished over the years, RI has been developed which is closely connected to ROI as well (Dearden, 1969). In 1890, Alfred Marshall was the first to ever mention the approach named as RI. He also defined economic profit as the excess part of invested capital over the interest rate. In other words, it was described as the difference between profit and total cost of capital (Marshall, 1890). When economic profit was defined by Marshall, he stated that cost of capital should be deducted from total net gains (earnings). Even though the fathers of classical economics, including A. Smith and R. Hamilton can constitute the essence of RI (Mepham, 1980), the performance evaluation methods, based on the concept of RI, have been used by General Motors since 1920 and by General Electric since 1955 (Bromwich and Walker, 1998; Martin et al., 2003).

RI and abnormal earnings models were introduced by Edwards and Bell in 1961 (Plenborg, 2002; Baginski and Wahlen, 2003). Moreover, they were developed by Ohlson and Feltman in 1991 and 1995 (Ohlson, 1995; Öztürk, 2008). This model is also called as EBO model (Edwards-Bell-Ohlson) (Öztürk, 2008). Thus, there are several names of RI that are used in the same sense including, residual returns, Edward-Bell-Ohlson criteria and abnormal profit (Küğü, 2011). According to Ohlson (1995), the formula of RI was based on dividend discounting valuation model. The relationship between equity values and accounting variables, including book value and earnings was comprised in Ohlson’s model.

The valuation models submitted by Ohlson, Feltham and Ohlson, as well as by Ohlson and Juettner-Nauroth have affected the financial analysis and accounting based equity valuation (Ohlson, 1995; Feltham and Ohlson, 1995; Ohlson and Juettner-Nauroth, 2003). The first and second studies mentioned a RI framework linking accounting earnings, equity book values and the value of owners’ equity together. The third study launched abnormal earnings growth valuation, proposing that in equity valuation, there is a first-order importance about forward earnings and earnings growth (Skogsvik and Juettner-Nauroth, 2013).

RI has been mainly developed in order to calculate the net profit that was derived from operating activities (Ali et al., 2002). It is stated that a business gains above the minimum required return on its operating assets. RI is calculated by subtracting cost of invested capital of operating assets from income (operating profit) (Garrison et al., 2011) and the formulation of RI can be shown as:

\[ \text{Residual income} = \text{Net operating income} - (\text{Average operating assets} \times \text{Minimum required rate of return}) \]

(Rieman et al., 2011).

Within the scope of RI method, how much net profit remained in business is calculated after subtracting a company’s cost of capital. Accordingly, RI is defined as the net profit remained after removing the expected return for the investment in the business from the operating profit (Ali et al., 2002). In other words, RI is computed by subtracting the amount of expected profit over the investment amount from accounting profit (Ali et al., 2002; Karahan, 2011) and is formulated as follows:
Residual income = Operating profit - (Expected rate of return x Investment amount) (Karahan, 2011).

RI can be identified as the spread between the investment centers’ profits and the opportunity costs of investment centers’ assets. Moreover, RI is the difference between profits of departments and capital costs of these departments (Atağan, 2010). These different definitions explain the same concept in distinct styles. RI can be expressed in different ways as follows:

Residual income = Operating profit

Residual income = Net profit after operating – (Expected rate of return x Total assets) (Atağan, 2010).

RI is a performance valuation method preferred by many businesses since companies are in search of identifying the exact amount of added value that is created as a result of operating activities. Furthermore, RI is expressed as an amount rather than as a percentage. Businesses aim at maximizing their RI simply to generate more profit than figures that exceed the demanded amounts by departments (Christensen et al., 2002). RI denotes the value created by a corporation within a specific time. When economic profit was measured by RI methodologies, these methods consider not only reported accounting expenses but also the opportunity cost of capital (Öztürk, 2008).

RI as a holistic methodology encourages managers to make new investments that are profitable for the whole business which in fact may have been rejected by managers who are evaluated by ROI. In other words, a project with a rate of return that is higher than the firm’s minimum required rate of return; additionally, whose rate of return is lower than the existing ROI of the business unit will be rejected by this unit’s manager who is being assessed by ROI. Nevertheless, this project will be accepted by a manager who is being evaluated by RI because the RI will be increased. Hence, healthier decisions will be made by managers who are evaluated by RI approach rather than managers who are evaluated by ROI approach (Garrison et al., 2011).

However, some companies do not prefer the RI method because the managers focus on maximizing the absolute amount of profit rather than the certain rate. The aim of maximizing RI is to have business units to generate the maximum amount of profit from the expected rate of ROI. In contrast, RI measure is not used in the comparison with the successes of the investment centers in different sizes because the tendency of RI results in favor of the greater investment center (Karahan, 2011).

There are many advantages of RI that lead such method to have become a widely used approach. The first one is that RI can be used with distinct rates of return for different kinds of assets. Moreover, distinct rates for different kinds of fixed assets can be considered as risks in different degrees. Secondly, in RI approach, the identical kind of asset can be required for getting the same return without considering the profitability of the definite business unit. Hence, consistency among business units is constituted in investing new assets by RI. Finally, the ROI of such business unit will decrease by making new investments. On the contrary, RI can be elevated by new investments which acquire a profit higher than the required percentage (Dearden, 1969; Bromwich and Walker, 1998). In the light of above advantages, RI has become a favorable method for evaluating the performances of business units.
Although RI has many advantages, this method also has limitations. Firstly, RI is affected by all the shortcomings of historical cost net asset valuation. The second one is that the accountant is put in the unfavorable situation by using a required rate of return that is risky and that is not measured easily at the present state of method. Thirdly, interest is assigned to accounting periods as expense. If there is a specialized case where the incurred interest may actually have future service potential, interest should be capitalized. Lastly, when comparing the performance of divisions in different sizes, RI may not be the best suitable tool. Smaller divisions usually have lower RI than larger divisions merely because of the fact that they are larger and not because they actually are more successful (Shwayder, 1970; Bromwich and Walker, 1998; Garrison et al., 2011).

2.3. Economic value added

Economic value added (EVA) is a tool used in order to manage financial performance. The exact profit obtained after the costs, such as interest, tax and labor costs would be sufficient to simply define this relatively contemporary performance measurement tool. It measures both profitability and improvement of businesses (Tenneco, 1995).

Although EVA has been a new method in terms of the financial point, the basis of this method is the concept of RI, it is observed that EVA has been a performance evaluation approach since its origin dating back to the 1890s (Baginski and Wahlen, 2003). In the 1890s, the groundwork of EVA was coming together, which was mainly based on RI. In the 1980s, the concept of EVA was developed by G. Bennett Stewart and Joel Stern Stewart & Company Advisory Group. EVA is a type of financial measure and has been developed on the basis of the actual profitability of companies, so EVA has been accepted very quickly by the financiers. Traditional performance measures, such as net profit after tax, net income, EPS, ROA, ROE, and so on, are based on the measurement of a corporation’s profitability and accounting profit. In contrast, EVA is a measure based on the figure of residual return of firm as well as economic profit. Hence, the costs of both debt and equity are taken into consideration (Goldberg, 1999; Grant, 2003).

With a simple expression, EVA is defined as the difference between after-tax return on capital provided by a company and cost of capital, EVA is found by comparing acquired profit with cost of sources that is used to achieve this profit. EVA can be calculated in different ways:

EVA = Net operating profit after tax - (Cost of capital x Invested capital)

Source: (Peterson and Peterson, 1996).

EVA = (Return on invested capital - Weighted average cost of capital) x Invested capital (Damodaran, 2011).

EVA shows that shareholders need to generate a return that compensates the risk endured by them. In other words, equity should achieve a return at least the same rate of similar risky investments in the capital markets. If the opposite situation takes place, there would not be a real profit obtained and the business would in fact not be working towards the best interest of the shareholders. Nonetheless, if EVA is zero, shareholders would achieve returns that cover the risks they undertake and such condition would be considered as sufficient. If EVA is positive, this would indicate that the corporation has acquired operating profit after tax more than the cost of the assets invested to achieve profit, which would mean that the business have created the added value. Nevertheless, if the result is negative, this means that the firm consumes capital
rather than creating value and it uses the added value created in earlier periods. After all, the company’s financial objective is to have a positive and constantly rising EVA (Chakrabarti, 2000).

There are several features of EVA as a performance measurement tool with the aim of adding value. First of all, EVA calculates a company’s real economic profit not affected by general accounting irregularities. The second one is that EVA is dependent to the notion of shareholder wealth, so it encourages the management to attain a higher EVA which is associated with a higher market price. Thirdly, in the calculation of profit, EVA takes into consideration both operating expenses and cost of capital, thus it reflects the approach of investors about the firm value well. The forth feature is that EVA constitutes the infrastructure of financial management by helping decisions on capital budgeting, planning of activities, acquisitions, and strategic planning. Moreover, EVA orientates managers towards the subject about whether they get a higher return than cost of capital for any new investment planned through the incentive systems that reward or punish managers by the value degree they add or reduce to the company. Thus, managers concentrate on using assets more effectively as being more sensitive about the cost of the source. Therefore, EVA provides benefits the management in making both strategic and operational decisions. The final one is that EVA is a way of explaining the corporation’s objectives and achievements to the investors as well as helping the investors detecting companies with high value (Ehrbar, 1998).

EVA has many advantages. Managers of a business or a division creating higher amounts of EVA will receive praise and incentives while they create value for shareholders (Myers, 1996). It will enable to determine which business units cannot show sufficient performance as well. Hence, if a business unit or a business line fails in creating positive EVA, managers of that unit are challenged as to whether the assets of that line should be allocated to a different line or to continue with the existing line (Pustylnick, 2011). Moreover, EVA increases business profit by efficiently working with the existing capital, generates more returns with using less capital, and constitutes a common language in planning and management. Additionally, in the sense of value creation, EVA establishes a link between decisions related to daily activities and long-term strategies (Lovata and Costigan, 2002).

In terms of operational managers, EVA ensures that cost of capital becomes perceptible. A manager may increase EVA of a division through increasing income or decreasing the amount of employed capital. Therefore, the unnecessary increase in capital will be prevented and activities that reduce revenues will be also avoided. Additionally, unused or idle (non-operating) assets can be discovered, so that managers responsible of such unit can dispose these assets. Further, EVA can be used as an incentive system that directs the interest of both managers and shareholders in the same direction and thus, EVA rewards managers for their carefully and deliberately made investment decisions. It also enables managers to take responsibility to act for the best interest of the business no different than the owner of a company (Pustylnick, 2011).

There are some points that should be considered in the development of a system based on EVA. One of the most significant one is that EVA focuses on one single period. In other words, EVA deals with business activities in one cycle usually an annual period of time (Kale-Korkmaz and Akdeniz-Özdemir, 2003). Moreover, Roztocki (2000) perceives EVA as an inactive accounting tool due to the fact that EVA evaluates past performance. Because the
nature of business of small companies changes exceptionally fast, the frequent financial evaluation is crucial.

Additionally, another objection is that EVA is a short-term financial measurement tool. Makelainen criticizes that EVA underrates the return at the beginning and excessively focuses on the return at the end of the process. Growing companies’ actual rate of return is good even though they are very prone to having a negative current EVA. Hence, the actual long-term shareholder value should reflect positively to the company. For this reason, EVA is accused of focusing on short-term performance measures which Makelainen has pointed out as a periodizing problem and proposes that it is needed to focus on the long term in order to overcome this problem (Makelainen, 1998).

EVA leads managers to abstain in terms of executing the structuring of a business process that is a new product idea or previously not implemented due to the fact that EVA is a financial evaluation metric aiming at achieving the desired results in short term. The main point is to assess the potential success of EVA with a long-term scope. Most of the investments are based on these two principles, which are accounting for the costs that will be incurred for an investment instantly and the returns, which will result from an investment, to be recorded in one-year time or longer. One of the reasons why managers hesitate in making new investments may be associated with the adverse effects EVA. Lower EVA will be perceived as a failure. Regardless of a manager’s performance in the long term, he/she will be exposed to sanctions such as wage cuts, authority restriction and even dismissal. As a consequence of the returns that will be provided in the long term by investment, increases in EVA will inevitably be observed in future periods. However, considering facts of time value of risk and money that are the most important bases of finance theory, current EVA is more significant than the future EVA because cash on hand is more valuable than money expected to be earned in the future. Therefore, EVA is easily influenced by managers’ decision-making process because the method is an accounting based financial performance assessment measure considering the corporation’s income and its expense (Demirgüneş, 2004).

Recently, studies about EVA have gathered attention at a significant pace and this has led to the emergence of some work. Ferguson et al., (2005) have investigated the performance values of companies which have adopted EVA. It is claimed that the adopters of EVA had higher profitability than the average value compared with their peers both before and after the adoption of EVA. Additionally, it is observed that the profitability of EVA adopters was increased relative to their peers following adoption. Moreover, Hamilton et al., (2009) have examined the factors associated with differences between adopters and non-adopters of EVA. Adopters had a positive direction in improving performance whereas non-adopters had a decline in performance. Earnings before interest and taxes margin, size and growth determinants significantly affected the performance.

Tseng (2008) has searched whether internal R&D effort and externally imported technology influence sales, and EVA of a business. 219 Taiwanese electronic manufacturers were analyzed for the period 1990-2003 and the research has shown that internal R&D effort had a positive influence on sales and EVA of a business, but imported technology did not significantly influence sales and EVA of a business.

Demirgüneş et al., (2010) have analyzed the relation between EVA and investment decisions as well as its reflections on firm value. Within the scope of investment decisions, there
was a strong association between EVA and the firm value (net present value). Furthermore, from the perspective of capital budgeting, it is stated that investment opportunities that create positive EVA should be appraised whereas investment opportunities creating negative EVA should be ruled out.

Bahri et al., (2011) have conducted a research on the performance of small and medium sized enterprises (SME) by EVA in addition to business practices ranging from sales, manufacturing, financial, production equipment and working capital management practices. 108 Canadian manufacturing firms have been examined during two consecutive years. Researchers have stated that EVA is useful in managing the performance in SMEs in combination with these business practices influencing the company’s results and EVA is helpful in determining challenges and identifying potential improvement’s sources for managers.

Besides, Demirgüneş (2009) has employed ISE listed companies over the period of 2006-2007. It is stated that there is a closer relationship between EVA and business value compared with traditional performance measurement tools, including net operating profit less adjusted taxes, operating cash flow, net profit and EPS. Nevertheless, EVA does not sufficiently explain the changes in stock returns as the traditional performance measurement tools do. Moreover, though EVA positively influences business value, it does not establish an important association with the stock returns. By the same token, Topak (2010) has examined 126 ISE national manufacturing companies over the period 2004-2009 and reported that EVA is a more confidential performance metric in measuring stock performance than traditional metrics of business performance.

Maditinos et al., (2009) compared EVA with EPS in explaining stock market returns of companies listed at the Athens Stock Exchange for the period between 1992 and 2001 and found that EPS has a closer relationship with stock market returns than that of EVA. Nevertheless, the explanatory power of EVA is enhanced by the conjunction with EPS. Furthermore, a study has been conducted by Parvaei and Farhadi (2013) aimed at assessing whether EVA measures and evaluates the company’s performance better than other performance metrics especially among performance metrics like net income, RI, and EVA. Furthermore, the predictability of these measures was examined for the determination of future performance. One of the noteworthy findings Parvaei and Farhadi has discovered is that EVA is the best measure in the sense of appraising performance of enterprise and management compared to other measures. Nonetheless, in terms of detecting future performance, the predictability of EVA is low.

3. DISCUSSION AND CONCLUSION

Value based approaches and indicators that can be used to measure firm value are important when investors evaluate their sources in the most effective way. Researches for value evaluation indicate that the awareness rate of managers about the limitations of traditional accounting measures, such as earnings per share, net operating income, return on equity, and return on assets, increases. Thus, value based management approaches which are return on investment, residual income, and economic value added, have been begun to use.

ROI is one of the most popular approaches to be used for the comparison of investments. Conceptually, ROI has a significant advantage because of combining all the factors affecting the profitability in a single percentage. Moreover, the comparison of profitability ratios belonging
to the opportunities within the company and outside the company, are possible. Nonetheless, ROI are paired with other performance criteria and should be used carefully (Karahan, 2011).

However, there are several aspects in being a better performance metric of RI than ROI ratio. RI motivates a business unit’s manager. If a corporation’s performance is evaluated by ROI, the projects may be rejected by the manager since this project’s internal rate of return is above a company’s cost of capital but below the average internal rate of return of a business unit. On the other hand, RI unites income and capital. This makes a linkage between the objectives of the manager and the firm. Moreover, comparing divisions using the ROI method is difficult but using RI (using only the capital income and the capital cost for each division) is easy to evaluate and compare the performance of all the divisions. Furthermore, RI is sensitive to changes in cost of capital. Managers are affected by the variations in the cost of capital because of sensitivity to alterations in the capital market. Shifting from the required rate of return to a corporation’s cost of capital changes can cause this sensitivity in RI approach (Shwayder, 1970).

Despite of the fact that it is largely accepted that RI is a better measure of performance than ROI, there are few reasons that RI is not used as much as ROI is used. First of all, RI shows that the monetary amount affected by the size of investment center while the ROI percentages are rates that allow the comparison of different sized investment centers. Secondly, a company’s RI figure is introverted information that does not report to the shareholders and outside of the business. Thirdly, a corporation’s performance is measured by RI over one year, like ROI. The effects of activities taken today on the future value are not measured by the RI methodology. To illustrate, present period RI and ROI may be increased simply by cutting down research and development but certainly, such act would threaten future cash flow and firm value can. Finally, RI does not solve the ROI control challenge. In the investment base, RI contains some value of fixed assets, like ROI. When calculating RI with the use of gross book value or net book value, RI can be increased. In addition, RI can be decreased by new investments along with an adequate average rate of profit. Thus, RI is not exactly a perfect performance metric when compared to ROI in terms of managing investments in fixed assets (Dearden, 1969; Zimmerman, 2000; Çelik, 2002).

On the other hand, the introduction of EVA and competing performance measures can be accepted as one of the most important financial management innovations of the past decade. Both management interest and academic research have been stimulated by EVA. It allows a more coherent and realistic conclusions rather than other performance criteria as well as providing long-term planning opportunities for managers. Moreover, EVA shows the ways to increase shareholder value (Lovata and Costigan, 2002). In addition, EVA constitutes a new and detailed structure which is used as a guide to make decisions, including the annual operating budget in the management of business performance, the management of capital budget, strategic planning, mergers and acquisitions (Chatterjee, 1986; Leepsa and Mishra, 2013).

Besides, EVA can be used to measure the performance of the overall firm and business units as well as to measure the competitive power of corporations. The value based management approach finds out whether companies use their own sources for the purpose or not. Thus, it can be said that there is a complementary and strong relation between EVA and value based management. Additionally, EVA can be an incentive system that provides the adaptation of aims of shareholders as well as employees. In terms of exactly assessing the competitive
advantage of companies, EVA emerges as an important decision variable. Therefore, these attributes leads to increase the interest in EVA.

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