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EVA VERSUS OTHER PERFORMANCE MEASURES

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ABSTRACT

Create value not only intended to satisfy shareholders. This is also the way to ensure the ability of the company to ensure its sustainability and finance its growth. The company will not attract new capital if it destroys value. "The concept of value creation is none other than the intersection of strategy (create value) and technique (evaluate the company)" (Powilewicz, 2002). The basic idea behind the different measures of value creation by a company is that a company creates value for its shareholders when the return on capital exceeds the cost of different sources financing used or the cost of capital. We are interested in analyzing the difference between EVA and other measures of performance in explaining on firm value on a sample of 82 French firms that compose the SBF 250 indexes, from 1999 to 2005. Thus, we have noticed that the CF is the best measure of performance followed by BN, BR and EVA. Hence, the finding of Stern Stewart, of the supremacy of the EVA is not confirmed in our context.

Keywords: EVA, Value Creation, Measure of Performance.

INTRODUCTION

Nowadays, value creation has become a concern of the finance. The question that arises is: Why think in terms of value creation? Create value not only intended to satisfy shareholders. This is also the way to ensure the ability of the company to ensure its sustainability and finance its growth. The company will not attract new capital if it destroys value. "The concept of value creation is none other than the intersection of strategy (create value) and technique (evaluate the company)". The basic idea behind the different measures of value creation by a company is that a company creates value for its shareholders when the return on capital exceeds the cost of different sources financing used or the cost of capital.



LITERATURE REVIEW

Value Creation Definition

In this regard, Pablo [Fernandez \(2001\)](#) stated that a firm creates value for shareholders when the shareholder return exceeds the cost of equity (required return on equity). Firm destroys value when the opposite happens.

The calculation of the shareholders value creation is as follows:

Shareholders value creation = market value of equity x shareholder returns x WACC.

Proponents of the concept of value creation state, according to Michel [Albouy \(1999\)](#) that there is a "good" correlation between this indicator and changing futures market price; better than Price Earnings Ratio (PER). In other words, the companies concerned with the interests of their shareholders and proven in the past continue to have good performance. Surely contestable affirmation given the rapid evolution of technology and market efficiency Thus, a company is effective when it contributes to increase shareholder wealth.

Measure of Value Creation

Why is it necessary to measure value? Just because the manager must maximize the value of the firm with the aim of creating value for shareholders and stakeholders (employees, government, customers, suppliers, creditors and society in general) According to [Caby and Hirigoyen \(2001\)](#), to measure value creation, we can distinguish two fundamental approaches: the approach of the line value and the approach of the valuation models.

The Approach of the Line Value

The Line Value: The Strategic Planning Associates Model

The Strategic planning Associates model links two significant value creation ratios in the company that is the leverage value ratio r_c / r_a (with r_c : return on invested capital and r_a : expected return of capital which is identical to the cost of capital) to measure the results of strategic decisions implemented in the past and the ratio M / B (M : market value of the company and B : book value of equity) to measure future performance of the company.

According to this model, three cases arise:

* $M/B > r_c/r_a$: the anticipated value creation is greater than the past value creation, the situation of the company knows a favorable evolution.

* $M/B < r_c/r_a$: the anticipated value creation is lower than the past value creation, the situation of the company knows a unfavorable evolution.

* $M/B = r_c/r_a$: this relationship describes the line value, it shows that anticipated value creation is equal to the past value creation.



THE DERIVED MODELS

The Marakon Associates Model

It is based on the same concepts as the Strategic Planning Associates model but the ratio M/B is connected to the difference $(r_c - r_a)$. It follows from this relation four types of situation:

- * The situation which corresponds to companies whose future performances will be higher than those obtained in the past;
- * The situation that represents companies that will keep in the future their good past performance;
- * The situation which corresponds to companies that are not able to improve performance in the future that was poor in the past;
- * Finally, the situation of companies that have reached a good performance in the past but the market believes that they will decline.

The Fruhan Model

It is a model that highlights the relationship between the Q ratio (M/B), as an indicator of future performance, and EV/B where EV represents the future economic value of the company estimated from historical data and the B book value of equity.

- * $M/B > EV/B$: future performance as estimated by the stock market is higher than the future performance based on historical data. There is value creation in the future;
- * $M/B < EV/B$: future performance estimated from the market value is lower than that estimated from historical data. There is destruction of value in the future;
- * $M/B = EV/B$: future performance estimated from the market value is equal that estimated from historical data. There is maintenance of value in the future.

THE APPROACH OF THE VALUATION MODELS

The Mckinsey Model

According to this model, the value of the firm is based on two main components: the present value of free cash flow during the explicit period of projection and the terminal value. This evaluation method requires the firm passing through three stages:

- * The prediction of free cash flow;
- * The estimation the cost of capital;
- * The estimation of the terminal value.



The EVA Model

Economic value added (EVA) is an old concept. Recently, this concept has been commercialized by several researchers and consulting firms that have proposed several methods to measure the EVA, the best known is that of Joel *Stern et al. (1995)*.

Their model provides a method of company valuation based on the generalization of the Modigliani and Miller formula, taking into account the results of the CAPM (Capital Asset Pricing Model), it is the concept of EVA and MVA.

Indeed, they proposed a method of calculating EVA which will measure the value added by a firm during a given period.

In its most primitive form, EVA is defined as:

$$EVA = NOPAT - WACC \times TA$$

Where :

NOPAT : Net Operating Profit After Taxes;

WACC : Weighted Average Capital Cost;

TA : Total Assets.

Thus, it appears that the increase in EVA can be achieved by:

- The increase in economic profitability existing capital already invested;
- Investment in new projects with a profitability greater than the WACC;
- The divestment of activities with a profitability lower than the WACC.

MVA was defined by *David (1998)* as "the difference between the total value of the firm and its cost of capital, including debt and equity".

Stern and Stewart (1994) defined a measure of value creation over the forecast period which is the market value added (MVA) as the present value of the EVA series:

$$MVA_t = \sum EVA_t / (1 + WACC)^t$$

The objective of the leaders is, in a logic of value creation, to maximize MVA, and not to maximize the market value of the company.

MVA, or rather the change in MVA, is a more relevant criterion than the only change in the share price since it is facing increasing value and invested capital to do so.

The Feltham-Ohlson Model

The model shows the relationship between the market value of a firm and accounting data of its operating activities and its financial activities. The book value is equal to the market value when it



comes to financial activities, but it may be different in the case of operating activities. Feltham and Ohlson (1995) assume that the market value is equal to the net present value of expected future dividends and demonstrate that, under clean surplus accounting, the market value is equal to the book value plus the net present value of extraordinary profits expected future (which are equal to accounting profits minus interest charges implicit on the opening book value).

METHODOLOGY

The objective of our study is to test empirically whether EVA is better than net income as a measure of firm's performance.

To achieve this objective, we will test the relative and incremental informational content via the following linear regression:

$$DY_{it} = a_0 + a_1 NI_{it} + a_2 RI_{it} + a_3 CF_{it} + a_4 EVA_{it} + \varepsilon_{it}^1$$

With;

DY_{it} : the dividend yield of the company i in year t ,

The dividend yield is the ratio, expressed as a percentage, between the dividends per share paid by a company and the price of the outstanding shares of this company.

$$DY_{it} = D_t / P_{it}$$

P_{it} : the stock value of share i three months after the end of the year t .

D_t : dividend per share of firm i in year t .

NI : the net income that is calculated from the financial statements.

RI : the residual income is calculated by subtracting capital costs from net income. The capital costs are equal to: $WACC * IC$.

With;

IC : invested capital = equity + long-term debts.

$WACC$: weighted average cost of capital.

EVA : economic value added

$$EVA = IC * (ROIC - WACC)$$

With;

IC : invested capital.

$ROIC = NOPAT / IC$.

$NOPAT$: net operating profit after taxes.

$$NOPAT = \text{Net income} + \text{financial charges} * (1-T)$$

¹- Worthington, A.C. and T. West, 2001. The usefulness of economic value added (eva) and its components in the Australian context. Accounting, Accountability and Performance 7(1): 73-90.

CF: The cash flow which is calculated by adding to the net income depreciations and amortisations ($CF_{it} = NI_{it} + DA_{it}$).

All explanatory variables will be reduced to the scale by dividing them by total assets for the period. The sample of our study is constituted by all the companies quoted in the Paris Stock Exchange and composing the SBF250 index and which are introduced before 1999 (companies introduced in 2000 and later are not included in our sample). For lack of unavailability of the data, the definitive sample consists of 82 companies. The period of study spreads out over 7 years: from 1999 to 2005.

RESULTS AND INTERPRETATIONS

The following table will summarize these results:

Table-1. Relationship between dividend yield and performance measures in the evaluation model of the firm.

CONS	NI	RI	EVA	CF	DW	R ²
11.37221 (2.688605)	0.448192 (0.11638)				0.681	68.50%
11.27002 (2.692952)		0.419293 (0.11629)			0.682	68.39%
11.07627 (2.728732)			-0.036653 (0.15280)		0.727	67.56%
11.18260 (2.628230)				0.815797 (0.13239)	0.747	69.88%
17.10153 (2.625181)	28.83960 (3.51137)	-28.33128 (3.50223)			0.900	72.21%
11.24132 (2.590223)	1.465269 (0.19765)		-1.597565 (0.25567)		0.687	70.83%
10.69788 (2.597859)	-0.955435 (0.25703)			1.815398 (0.29899)	0.917	70.71%
10.95573 (2.607956)		1.362525 (0.19758)	-1.488709 (0.25625)		0.681	70.43%
10.84990 (2.584391)		-1.086424 (0.25424)		1.954344 (0.29651)	0.947	70.96%
9.272914 (2.044918)			-4.915465 (0.27339)	4.830570 (0.24585)	1.704	81.86%
15.27771 (1.790514)	31.31423 (2.41007)	-32.00306 (2.39388)	-5.125238 (0.23128)	5.778590 (0.26917)	2.363	87.17%

The values between parentheses are the standard errors.

We note that all variables are statistically significant.

The estimated coefficients in the table above show that RI and EVA are negatively correlated with dividend yield while the NI and CF, as performance measures, are instead positively correlated

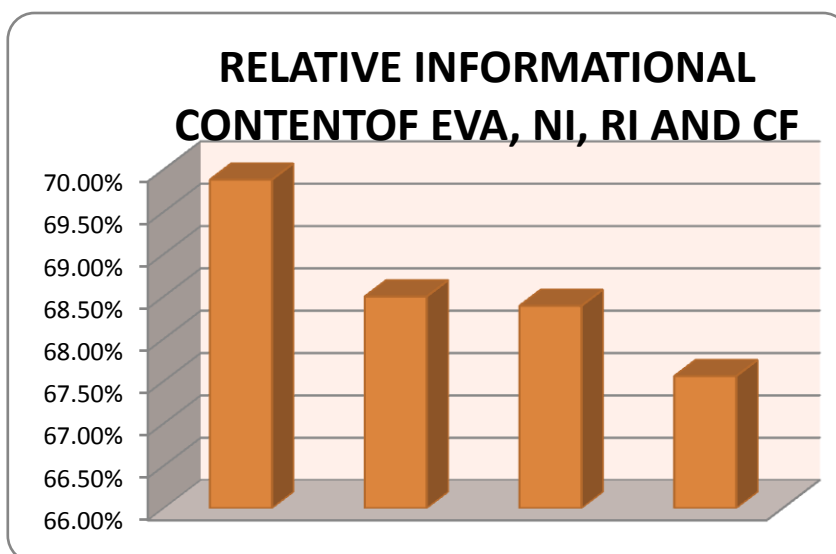
with dividend yield during the period 1999 to 2005. The regression results for tests of relative and incremental informational content will be presented in the following tables.

The Relative Informational Content

CF	NI	RI	EVA
69.88%	68.50%	68.39%	67.56%

These results show that there is a significant difference in the relative informational content. We note that the CF explains better dividend yield than the NI, RI and EVA.

Graphic-1. The relative informational content of EVA, NI, RI and CF



The results of the relative informational content show that CF has the explanatory power of the highest ($R^2 = 69.88\%$) followed by the NI ($R^2 = 68.50\%$), the RI ($R^2 = 68.39\%$) and finally the EVA ($R^2 = 67.56\%$).

These results refute the finding of [Stern and Stewart \(1994\)](#) of the supremacy of the EVA and the inadequacy of traditional performance measures [Lovata and Costigan \(2002\)](#).

But [Biddle et al. \(1997\)](#), led to the result that consists in the supremacy of net income in explaining dividend yield and firm value. The second position was taken for them by the residual income followed by EVA and end by operating cash flow. Similarly, [Peixoto \(2000\)](#) in his study on a sample of Portuguese public companies found the dominance of NI ($R^2 = 65.47\%$) compared to the EVA ($R^2 = 63.49\%$) and earnings operating ($R^2 = 63.59\%$).

The Incremental Informational Content

NI/RI	RI/NI	NI/EV A	EVA/ NI	NI/CF	CF/NI	RI/EVA	EVA/ RI	RI/CF	CF/RI	EVA/C F	CF/EV A
3.82%	3.71%	3.27%	2.33%	0.83%	2.21%	2.87%	2.04%	1.08%	2.57%	1.98%	14.3%

The incremental informational content of NI / RI, for example, is calculated by subtracting from the R^2 of the regression of these two measures together, the R^2 of RI.

The results of this table show the incremental informational content tests of combinations of pairs NI, RI, EVA and CF.

Combinations in pairs of EVA and NI, RI and CF indicate that the explanatory power has increased by 3.27%, 2.87% and 14.3% above the measure of EVA alone.

The results indicate that the CF has the highest relative informational content among other measures, with the EVA (11.98%), RI (1.08%) and NI (0.83%), it produces only a limited incremental informational content. In terms of informational content, the pair of the most logical variables in explaining dividend yield is composed by CF and EVA (they have the highest incremental informational content), followed by the pair composed by NI and RI.

CONCLUSION

Measuring value creation is not only a communication tool for listed companies, but also a tool for daily management much easier to apply than the company is small. Our results showed that, for French companies, the CF is the best measure of performance followed by BN, BR and EVA. Hence, the finding of Stern Stewart, of the supremacy of the EVA is not confirmed in our context.

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