

NEW ENGINE OF ENTERPRISE VALUE: NONFINANCIAL FACTORS. A CASE STUDY ON EUROPEAN COMPANIES

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Abstract: In the past two decades there have been fundamental change in the economic system by shifting interest from resource-based economy to information-based economy. In the new economy, the value of an enterprise is becoming increasingly dependent on intangible resources and less on production processes and financial capital. The development of the new economy contributed in considering social information as an essential factor in company performance. Enterprise's communication with business partners, transparency in reporting information and involvement in local community development are considered key factors in ensuring the continuity of its own activity. The objective of this article is to analyze the influence of sector activities and time variation on nonfinancial factors and market value based a sample composed of 70 european entities for the period 2009-2012. The statistical tool used was SPSS 20 and work method was repeated measures ANOVA. The results showed several differences between sector of activities and time factor, providing support for developed of nonfinancial factors.

Keywords: market value, nonfinancial factors, social information, social communication, one-way ANOVA.

1. Introduction

Traditional management and financial reporting system have lost relevance due to the inability to provide investors with reliable information about the nonfinancial aspects of the entity. Financial reporting standards prohibit the presentation of the non-financial factors in anual statements and only part of this resources can be recognized and capitalized. In this direction, the book value of the enterprise is an outdated concept and does not consider non-financial factors contributing to the enterprise value.

The impact of nonfinancial factors on the enterprise value is seen through the new economy which is interested in knowledge and innovation. Most studies reveal that there is a direct association between non-financial reporting and enterprise value maximization, showing the need for organizations to pay attention to these factors in order to create economic value (Sveiby, 1999).

In the past twenty years, customers and stakeholders have become increasingly interested in social, environmental and reporting policies applied by multinationals. The lack of information on operations with significant impact on consumers, investors and local community imposed the compulsory non-financial reporting by european corporations. In this way, non-financial reporting is a powerful tool of communication with investors and consumers being structured on the following aspects: social, environmental and economic policies.

The scope of this article is to analyze the influence of sector activities and time variation on nonfinancial factors in correspondence with market value by using repeated measurements.

2. Review of prior literature

Increased interest in non-financial factors can be expressed by a need to explain the difference between market value and book value of a company. Non-financial factors are determinants value of enterprise but can not be considered explanatory factors of the difference between market value and book value of the company.

This is demonstrated by the following: book value is determined based on the accounting policies applied by each entity and provide financial information about his financial past, while the market value suffers the influence of exogenous factors unrelated with the company activity as investor's perceptions on the ability to generate future income, interest rate fluctuations, analysts financial estimation and international market evolution. Non-financial factors represents all non-monetary resources in the form of skills, knowledge, practices and procedures that enable the creation of economic value. Literature is using a variety of terms to describe non-financial factors, namely intellectual capital (Brooking, 1997; Edvinsson and Malone, 1997; Sullivan, 2000 Stewart, 1997; Petty and Guthrie, 2003; Rastogi, 2000), intangible assets (Edvinsson and Malone, 1997) and intangible factors (Gu and Lev, 2001).

In essence, all terms used in the definition of non-financial factors express non-monetary aspect of these resources and their contribution to the generation of competitive advantages. Differentiation of the terms concerns their association with different disciplines, therefore the term of intangible assets is used in economic literature, intellectual capital is used in human resources and management, and economists prefer to use the term intangible factor.

Typology of non-financial factors stick with the following structure: human capital, structural capital and relational capital (Sveiby, 1997). *Human capital* is considered an essential resource in enterprise value creation process (Reed, 2006), as is a permanent source of creativity and innovation. These non-financial resources are expressed as individual competencies of employees and express their ability to create innovative products and act in different situations and consists in experience, expertise, skills and knowledge of employees.

Structural capital includes all work procedures, software, databases, and organizational culture (Bontis and Serenko, 2009). Fundamentally, structural capital refers to the internal organization which supports human capital to create economic value and financial health for the organization (Edvinsson and Malone, 1999). The difference between human capital and structural capital is that human resources includes knowledge of individual employees, while structural capital refers to the knowledge created by employees inside the company. *Relational capital* represents all the external resources of the organization, in terms of brands, alliances, partnerships, distribution channels and relationships with business partners.

Lack of information about operations carried out by European multinationals have led to the development of European legislation (Global Reporting Initiative) which concerns factors reporting related to social responsibility through the use of specific indicators in order to ensure comparability of results. In Table 1 it is realised the structure of non-financial factors in terms of procedures issued by the European Commission on social responsibility.

Table 1. Reclassification of nonfinancial factors

Subcomponents	Explications
HUMAN CAPITAL	
Characteristics of employees	Practices and procedures regarding employee compensation and treatment equal regardless of gender, age, ethnicity and sexual orientation.
Training of employees	Professional development programs and knowledge of work procedures.
Rewarding and motivating employees	Practices on retirement plans, health insurance and employee secondment
STRUCTURAL CAPITAL	

Quality of products and services	Practices and procedures for improving products, recycling and reducing the environmental impact of packaging.
Logistical procedures	Practices and procedures for the management of raw materials.
Managerial Ethics	Procedures and practices concerning marketing communications, advertising, promotions and sponsorships.
Organizational transparency	Corporate policies and practices on sustainability goals
Environmental Policy	Policies on protected habitats and ensuring biodiversity
Climate change	Policies and programs on energy and alternative technologies
RELATIONAL CAPITAL	
Social relationships	Environmental practices, local development programs and donations.
Relationship with business partners	Policies and practices regarding customers and suppliers selection.
Investor Relations	Politici si practici privind alegerea consiliului de administratie si luarea deciziilor manageriale Policies and practices regarding the election board and managerial decision making
<i>Source: Own elaboration by OECD guidelines</i>	

3. Research methodology

In order to achieve the scope of research, it is necessary to define the following objectives:

- Analysis the significant differences of the variables generated by sector area.
- Analysis the significant variation suffered by the variables in the period 2009-2012 as a result of the financial crisis and a compulsory financial reporting.
- Analysis of interaction between sector area and time variation.

3.1. Target sample and variables analyses

The sample analyzed is represented by 70 european multinationals and includes 280 records for the period 2009-2012. In order to ensure data comparability, the following restrictions were imposed :

- Entities to present financial data for the entire period analyzed;
- Financial year to be realized on December 31st.

Table 2. Reclassification of sector area

<i>ICB</i>	<i>Own classification</i>
Industrials	Industrial goods (IG)
Basic Materials	Basic materials (BM)
Oil and gas	
Consumer goods	Commercial sector (CS)
Consumer services	
Telecommunication	Information technology (IT)
Information technology	
Health care	Services (SE)
Financials	
Utilities	
<i>Source: Own prelucration</i>	

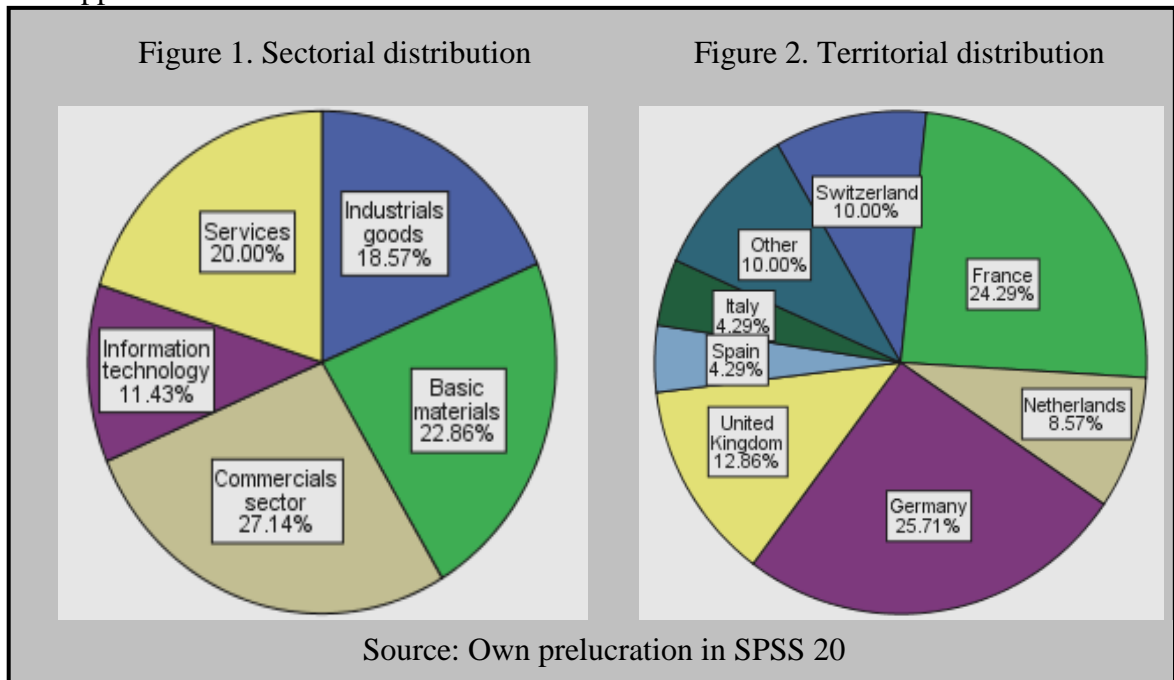
Data regarding non-financial factors analyzed were collected from Fortune magazine and were calculated following questionnaire applied by Hay Group on managers of companies analyzed. Market value data were collected from the annual financial statements reported by the companies in the sample.

Grouping entities by sector area was done using Industry Classification

Benchmark(ICB) and it was applied a reclassification based on logical reasoning presented in Table 1.

Sectoral distribution of multinationals (figure 1) show the specificity of each sector regarding the number of sellers. On the one hand, preponderance of companies in the commercial, industrial and services sectors is predictable due to the presence of a large number of participants and the approach to the perfect competition model. On the other hand, we have information technology and basic materials sector which are characterized by a small number of sellers being under the influence of regulatory bodies are distinguished.

In terms of geographical distribution (figure 2), we see companies analyzed belonging to rich countries, a situation somewhat predictable because these countries have developed policies to support and attract investors.



For reaching the purpose of research, the following variable were being used:

- *Market value (MV)* represents the total value of the issued shares of a company, being equal to the share price times the number of shares outstanding.
- *Social responsibility (CSR)* represents the entity's ability to develop effective policies and strategies to reduce resource consumption in the production of goods and services.
- *Management quality (QM)* represents all corporate policies and practices aligned with sustainable items and the involvement of employees in the management entity.
- *Social investment (INV)* represents the entity in the community involvement as charity, donations of goods and services and public health protection activity.
- *Innovation (INN)* represents the enterprise capacity to use alternative environmental technologies and develop effective solutions for improving distribution channels.
- *Quality of products and services (QP)* represents the entity's ability to effectively manage the impact of its work on civil society by creating new opportunities of life, use of sustainable technologies and developing products and services that ensure quality of life for consumers.

3.2. Method for data analysis

Repeated Measures ANOVA allows the statistical analysis of a variable X depending on a variety of categorical factors, through decomposition of this variant into two components: intergroup variation and intragroup variation.

Intergroup variation is measured using the average deviations between each group (Y_j) and overall average (Y), and the deviations are weighted by the number of individuals in each group. Intragroup variation is measured using deviations between observed values for each statistical unit of a group, Y_{ij}, compared to the group average (Jaba, 2013).

The application of ANOVA repeated measures process requires the compliance of the following assumptions: normality distribution, homogeneity of variance between group, correlation between dependent variables should be equal between the groups and all the within group independent variables must be measures across one group (Mayers A., 2013)

Repeated Measures ANOVA tests three hypotheses: (1) There is no difference among the levels of independent factor; (2) There is no differences among time factor and (3) There is no interaction between independent factor and time.

Model assumption is: $Y^{hij} = \mu + \gamma^h + \gamma^j + (\gamma^T) + \pi^{i(h)} + e^{(hij)}$, unde: μ - mean, γ^h -effect of group h ($\sum_j \gamma_j = 0$), γ^j -effect of time j by group h ($\sum_h \sum_j (\gamma^T)_{hj} = 0$), $\pi^{i(h)}$ -individual difference component for subgroup i in group h and $e^{(hij)}$ - error for subject i in group h at time j.

The test statistics used to check the assumptions is the Fisher statistics, defined as the ratio between the explained variant of considered factor and unexplained variant, determined by rezidual factors.

Table 3. ANOVA hypothesis

Source	df	F	MS
Group	s-1	$F_{S(G)} = \frac{MS_{S(G)}}{MS_R}$	$\frac{SS_G}{s-1}$
Time	n-1	$F_T = \frac{MS_{S(T)}}{MS_R}$	$\frac{SS_T}{n-1}$
Group x Time	(s-1)(n-1)	$F_{GT} = \frac{MS_{S(GT)}}{MS_R}$	$\frac{SS_{GT}}{(s-1)(n-1)}$

Source: Fields, A.P. (2013)

Repeated measures ANOVA tests the hypotheses of no differences between several groups, but does not determine which groups are difference. In order to identify groups showing significant differences it is used multiple comparisons by using tests such as Bonferroni, LSD or Tukey HSD.

In this study, statistical analysis was performed by six dependent variables and two independent variables: sector of activity (intergroup variation) and repeated measurements (intra-group variation). In the detection of significant differences between groups we used the LSD test and data processing analysis was performed using SPSS 20.0 statistical software.

4. Results and discussions

The period analyzed in this study is characterized by the financial crisis hit and introducing of the mandatory non-monetary reporting by European multinationals. These items had a significant impact on the entity enterprises activity, such as management was concerned of activity continuity and not given the importance of non-monetary factors entity. Market value is the first indicator that feels this financial crisis starting with 2009 and the business sectors most affected in this regard are industrial goods and customer services.

On the other hand, non-financial indicators analyzed are experiencing unfavorable economic context in 2010, the peak of the financial crisis, but progress in the next period.

Table 4. Descriptive statistics for the period 2009-2012

SA		Mean					Mean				
		2009	2010	2011	2012		2009	2010	2011	2012	
IG	MV	18.618	2.1435	1.9616	2.1285	QM	.9	.00	.00	.46	
		59.282	8.2165	7.3621	6.9088		.69	.00	.75	.33	
		36.373	4.4322	4.5281	4.6440		.89	.53	.55	.12	
		52.121	5.4002	4.1630	3.7874		.63	.13	.84	.41	
		55.480	5.9546	5.5060	5.0944		.57	.43	.79	.24	
IG	INV	9.31	7.92	8.08	7.54	INV	.9	.69	.38	.77	
		6.56	5.88	5.88	7.75		.44	.63	.63	.19	
		5.74	3.47	5.51	5.00		.53	.11	.16	.47	
		9.00	8.38	9.88	8.75		.38	.00	.38	0.38	
		7.07	6.57	6.25	7.21		.57	.14	.14	.93	
IG	CSR	8.54	8.15	7.00	8.08	QP	.8	.69	.92	.15	.54
		6.94	5.13	6.50	6.94		.81	.56	.25	.19	
		5.58	3.95	5.11	5.74		.89	.79	.63	.63	
		7.88	6.25	6.25	7.00		.50	.75	.38	.25	
		6.79	6.50	6.57	7.93		.00	.00	.43	.43	

Where SA- sector, IG- Industrial goods, BM- Basic Materials, CS- Commercial sector, IT- Information technology and SE-services.
Source: Own elaboration in SPSS 20.0

The recorded values of nonfinancial factors show their preponderance in the sector of information technology and industrial goods. This is somewhat predictable since these sectors

are characterized by innovative products and services, unique and advanced manufacturing technologies.

On the other hand, we have customer services sector which highlights a low level of non-financial factors presence generated by homogeneity of products, atomistic market and mobility of factors of production.

Multivariate outcome showed several differences for sector and time factor, providing support for developed of nonfinancial factors. The main effect comparing the five sectors was significant, Wilks Lambda=0.644, $F(24, 252) = 2.015$, $p < 0.05$, partial eta squared = .061. Also, there was a substantial main effect for time, Wilks Lambda = .563, $F(18, 48) = 26.072$, $p < .05$, partial eta squared = .437. There was no found significant interaction between sector and time, Wilks Lambda = .251, $F(72, 191) = 1.106$, $p < 0.05$, partial eta squared = .292.

Univariate between-group analyses showed that several differences were found for social responsibility ($F(4,65)=1.736$, $p=0.153$) and quality of management ($F(4,65)=2.176$, $p=0.081$). Univariate within-group analysis confirmed that market value ($F(3,195)=4.087$, $p < 0.05$), innovation ($F(3,195)=2.384$, $p < 0.017$), social responsibility ($F(3,195)=3.936$, $p < 0.05$) and quality of products and services ($F(3,195)=3.464$, $p < 0.05$) were significantly improves between 2009 and 2012. ANOVA outcome shows that we don't find any interaction between time and sector type for all the variables.

Table 5. Pairwise comparison for sector factor

Variable	MV			INN		CSR	QM		INV			QP	
	IG	BM	SE	IG	IT	IG	IG	IT	IG	BM	IT	IG	IT
Sector I													
Sector J	BM	CS	IG	CS	CS	CS	CS	CS	CS	IT	CS	CS	CS
Mean Difference	-5080	27935	35019	3.28	4.06	2.85	2.84	2.97	3.39	-2.81	4.21	3.09	3.48
Sig	0	0.015	0.007	0.00	0.002	0.01	0.01	0.029	0.00	0.004	0.002	0.00	0.001

Through multiple comparisons between groups variation we can depict significant different between sectors of activity for each variable. Market value, the main indicator for assessing the enterprise, exposes that the basic materials sector shows values significantly different from industrial goods and customer goods, while the industrial goods is assessed differently from customer services.

A common characteristic of non-financial factors analysis shows that there are significant differences between sector of industrial goods and customer services. This demonstrates a large presence of nonfinancial factors into innovative sectors of activity such as industrial goods and information technology.

Innovation, quality of management and quality of products shows that sector of customer services present significant differences compared to industrial goods and information technology, demonstrating that structural factors are specific to the last two sectors of activity.

Table 6. Pairwise comparison for period 2009-2012

Variabila	MV			NN	CSR			NV	QP	
	2009	2010	2010		2009	2010	2011		2010	2009
Sector I	2		2							
Sector J	2		2							

	010	011	012	010	010	012	012	012	010	012
Mean Difference	(7919.3)	252.5	167.86	.092	.148	1.14	0.85	1.03	.975	1.00
Sig	.003	.003	.005	.009	.009	.012	.005	.023	.017	.007
Source: Own elaboration in SPSS 20										

Multiple comparisons by within factor shows that the most significant differences are identified between 2009 and 2010, which is predictable from the economic context of the analyzed period. On the other hand, *quality of management* present no significant differences in the analyzed period, showing the ability of management to adapt to new market requirements.

Conclusions

In the new economy, maximizing enterprise value through non-financial factors constitute the main focus of management. Repeated Measures ANOVA application process showed that non-financial factors are preponderant in the industry of goods and IT in comparison customer services and services area. Multiple comparisons showed that the time factor during 2009-2010 was harmful to the development of non-financial factors, because of the need to adapt to new economic conditions.

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