

The Impact of Intangible Assets on the Company's Market Value: A comparative analysis in the listed companies on Latin America and USA.

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Abstract

Based on the assumption that the market price of a stock immediately incorporates all relevant information on the assets, which are a reasonable measure of the market value of a company, the impact on financial statements caused by restrictions to record intangible assets are of significant interest. This article aims to study the relationship between the corporate market value and intangible assets not recorded in order to verify the existence of a negative relationship, which would explain part of the differences between the book value and market value of companies, occasioned by the restrictions of accounting standards for records intangible assets, whose record is basically limited to situations of business combinations. For preparation of a multiple regression model to study this negative relationship between intangible assets recorded and the market value of companies, we selected an Intangibility Degree as the dependent variable, which represents how many times the market value is higher than book value, and IROAI (Return on Intangible Assets Ratio), a proxy developed which aims to capture the effect of the presence of intangible assets and the abnormal return of the total assets of the companies, since they are understated due to the absence of registration of internally generated intangible assets. Financial variables were also used as explanatory variables in order to reinforce the equation and isolate the effect of market expectations on intangible assets. This study confirmed the existence of a negative relationship between these variables in Brazilian, Mexican and Argentinean markets and allowed the development of a model indicative of potential intangible assets not recorded in these markets, which explains part of the difference between market and accounting values. The proxy IROAI was not statistically significant in United States of America's, Chile's, Peru's and Colombia's markets.

Key Words: Intangible assets, degree of intangibility, market-to-book ratio, book and market value.

1 Introduction

The objective of this research is to study and identify the impact of intangible assets on the market value of the companies in Latin America countries and USA. With this research we intend to prove that as more intangible assets is recorded in the books, fewer will be the differences between the book value and the market value. The secondary objective of this research is to verify if there are differences between the countries studied.

One purpose of accounting is to provide users with reliable information, and that information comes from the Equity group's which represents the monetary value of the company according to the generally accepted accounting principles. However accounting principles for this measure were based on a scenario of industrial economy focused on tangible assets. In recent decades the presence of intangible assets in companies increased significantly. However the rules and accounting standards did not follow with adequate time this tendency and still restrict the registration of major internally generated intangible assets, which is permitted basically in the event of a business combination where the acquiring company records all intangible assets of the acquired company at fair value.

According to Kam (1996) the *raison d'être* of accounting is to provide information to users and the user's demands for information will change according to the evolution of the economy, society, and the emergence of new technologies. Therefore, the accounting rules must follow this evolution, otherwise the investors will seek other sources of information. Lev and Zarowin (1999) observed that the lack of intangible assets registration in the financial statements is responsible, partially, for the loss of relevance of accounting numbers in the assessment and projections of the share price of companies.

In 2010, Salamudin et. al. investigated the relationship between the market value and the intangible assets by applying multiple regressions with the market value as the dependent variable, and the net value of assets and net income divided by revenues as explanatory variables. In this Salamudin (et al) observed that intangible assets are important to determine the market value of firms and found the declining importance of tangible assets.

Belem and Marques (2012) analysed market expectations that are not explained by intangible assets recognized in the balance sheet and observed that the degree of intangibility of the companies has a positive impact on the return on equity. Perez and Famá (2006) found

a positive relationship between intangible assets and financial variables and found that investment in intangible assets provided increased revenue and company value.

In the theory of efficient markets (Fama 1970) the market price of a stock immediately incorporates all relevant information to the asset, which is the best estimate of the current share price (company), and therefore the best estimate of its asset value. In this context, it may be assumed that the book value per share of a company should be close to its share price on that same date. However in reality, there are major differences between the book value and the value traded on the market. These differences are related to effects of future expectations, irrational behaviour of investor, interest rate changes and also could be related to the lack of intangible assets registration in the accounting records, due to the restrictions of accounting standards.

In this context, what is the impact of intangible assets on market value in Latin America' and USA's companies on the date of 31/12/2012?

As observed by Lev (1997), restricting the registration of intangible assets limits the usefulness of accounting information for the analysis of companies that have large sums of intangibles.

This research has academic and professional appeal due the needed to study the impact of the restrictions of intangible assets registration, the gap between the market and book values, and to encourage the reflection about the adequacy of accounting rules in the actual economic scenario.

This study also contributes to the academic field by proposing a model for identification and pointing potential relevant intangible asset not shown in the balance sheet, contributing to discussion regarding the needed of full intangible asset registration.

2 Background

In accordance with international accounting standards - IAS 38¹ (1 July 2009), intangible asset is an identifiable non-monetary asset without physical substance, which is controlled by an entity as a result of past events and which is expected to result in future economic benefits to the entity.

For IAS 38 (July 1, 2009) spending on advertising campaigns, customer relationship and investment in intellectual capital, through the subsidy of courses for employees, cannot be

¹ <http://www.ifrs.org/IFRSs/IFRS-technical-summaries/Documents/Port2011/IAS38.pdf>

recorded as intangible assets, even generating future economic benefits, because they are considered as contributions to the goodwill derived from expected future earnings generated internally, whose record is not allowed. According to the standard the internal goodwill does not meet the necessary criteria and in some cases it is not possible to separate the costs incurred for the internal generation of intangible assets of the regular operations of the entity. According to IAS 38 intellectual capital is often excluded from the concept of intangible assets for financial purposes due to weak control that entity owns.

Aboody and Lev (1998) identified in their research that the recording of intangible assets provides information relevant to investors, and therefore suggest that some internally generated intangible assets, such as spending on research and development, should be recorded as assets in the financial statements.

Despite the prohibitions to recording the intangible assets generated internally, IAS 38 allows an exception to recording these intangible assets at the time of a business combination. In a business combination the acquiring company must measure and record all the assets and liabilities at fair value, it is including a identifiable intangible assets. Even the difference of the amount paid and the fair value of all identifiable assets and liabilities (when positive) is considered an intangible asset and is accounted as goodwill in the consolidated financial statement of acquiring company.

As soon, this exception of IAS 38 causes an inconsistency to comparing consolidated financial statements of entities in the same segment. For example, a bank company that has a strong trademark in the market, which is resulted of years and years of investments in the development it, probably there is no material values registered as trademarks (intangible assets), since it is a internally generated intangible asset and the recording at fair value is prohibited.

However, another bank, which acquires a bank already established, in order to get your market share, could register the brand of the acquired bank in a business combination scenario. Consequently this exception will result in a discrepancy and loss of comparability between these two companies, once only one of them will have significant intangible assets recorded in the financial statements, what could cause decisions mistakes of investors and financial analysts when they are deciding for one of these companies. Reinforcing this supposition Aboody and Lev (1998) found evidence that not capitalizing intangible assets is associated with errors in predicting analysts' earnings.

As we are studying six different countries in this research it's worth to cite that . Argentina, Brazil, Chile, Peru, México already require the adoption of IFRS to listed companies, which include the population of this research. In this context we can assume that all financial statements are comparative under IFRS principles.

Regarding the USA, that also is part of this study, it is important to note that there are few significant difference between US GAAP and IFRS in the topics of Intangible Assets and Business Combination. Ernst & Young (2011) list three significant differences:

- Advertising Cost - USGAAP allow the capitalization of direct response advertising may if attend the specific criteria in ASC 340-20. IFRS prohibited any capitalization of advertising.
- Revaluation - USGAAP doesn't allow revaluation of intangible assets
- Development Cost - The difference between IFRS and USGAAP is more related to the level of detail in USGAAP rules than properly differences. The application of IFRS principles may be largely consistent with USGAAP(Ernst & Young, 2011).

3. Research Methodology

According to Marconi and Lakatos (2007) descriptive quantitative research consists of empirical research whose primary purpose is the design or analysis the characteristics of facts or phenomena. In this sense the present work fits into descriptive quantitative research, whose goal is to test the hypothesis that the registration of intangible assets impacts negatively on the difference between the market value and the book value of the companies.

3.1 Sample

In order to verify that the registration of intangible assets impacts negatively on the difference between the market value and the book value of the companies we sought listed companies in Latin America Countries and United States of America.

We obtain the financial statement data and stock prices of Brazilian and USA's Companies from Economática software. For Argentina, Chile, México, Peru and Colombia we get the information from Thompson database.

Venezuela was excluded of this study because sample has just few listed companies data in the year of 2012. Also Colombian companies was excluded because the local GAAP is

different of IFRS and USGAAP, what could affect the data interpretation. According PRICEWATERHOUSCOOPERS (2013) the adoption of IFRS was approved by the Colombian Government in 2009 and will be required for the year ended December 31, 2015.

We excluded the observations with no intangible assets record or with losses in order to allow the mathematical IROAI calculation.

The total sample was 958 companies which is composed by:

- 32 Argentinean Companies
- 175 Brazilian Companies
- 122 Chilean Companies
- 69 Mexican Companies
- 61 Peruvian Companies
- 499 U.S. Companies

3.2 Variables

To study the negative relationship between intangible assets recorded and the company's market value was used a regression modeling with Intangibility Degree (GI) as dependent variable.

It was developed a proxy, called IROAI ratio, that represents the abnormal return caused by lack of intangible assets which registrations is restricted. Financial fundamentalist variables were also used as explanatory variables in order to reinforce the equation and reduce the impact of market expectations on the IROAI.

The postulated equation of this study is presented below:

$$GI = ROE + EPS + BVS + P/E + IROAI + e$$

$$GI = \beta_0 + (\beta_1 * ROE) + (\beta_2 * EPS) + (\beta_3 * BVS) + (\beta_4 * P/E) + (\beta_5 * IROAI) + e$$

Where:

- ROE = Return on equity
- EPS = Earnings per Share
- BVS = Book value per share
- P/E = Price / Earnings Ratio
- IROAI = Return on Intangible Assets Ratio
- β_0 = population intercept

- β_n = correspond to slope coefficients of each explanatory variable

3.2.1 Degree of Intangibility or Book-To-Market Ratio

The degree of intangibility has been used as an analysis tool in several studies (KAYO, 2004; PEREZ; FAMA, 2006; BELEM; MARQUES, 2012). It is obtained by dividing the market value of the company (calculated by multiplying the number of shares at the quoted share price) by the net book value, as shown below:

$$GI \equiv \frac{MV}{VC}$$

Where:

GI = Degree of intangibility

MV = Market Value

VC = Book Value

This ratio represents how many times the market value is above (or below) the book value. Kayo and Fame (2004) used this same ratio, assuming that higher the intangibility degree more relevant will be the intangible assets in the company. This study also assumed that the higher the ratio GI is, the greater will be the relevance of intangible assets in the company, since the market value of companies in the context of efficient market should be close to book value, however the limitations of record, mentioned in the previous topic, contribute to this distortion.

Others studies use similar ratio, calling Book-To-Market-Ration that is the opposite of the formula and also reflects the difference between what the financial statements under GAAP report as book value of common equity and what the market assesses to be the economic value of equity (BEAVER; RYAN, 1993).

3.2.3 IROAI (Return on Intangible Assets) Ratio

As Bakar, Ibrahim and Hasan (2010), the premise of this work is that intangible assets represent a significant portion of the market value of companies. The bigger difficulty found in the development of this study was to select a variable that captures the isolated effect of intangible assets not recorded.

As already mentioned, there is a prohibition on registering the most intangible asset, exception given to a business combination whose record of intangible assets is allowed. Intangible assets are relevant in the economic performance of companies and firms with higher proportion of intangible assets generate greater value for its shareholders (Perez and Famá 2005). In this line of analysis, it is expected that a lower percentage of intangible assets recorded, in relation to total assets, will result in greater returns on assets, since the total assets is undervalued (by the absence of internally generated intangible assets). Therefore, the ROA (Return on Assets) in companies that already exist relevant intangible assets (acquired) recorded should be less.

In this context we developed a "proxy" calculated dividing the percentage of intangible assets recorded by ROA. The simplified calculation of "IROAI Ratio" can be formed by the division of intangible assets by net income.

$$\text{IROAI} \equiv \frac{\frac{\text{IA}}{\text{TA}}}{\text{ROA}} \equiv \frac{\frac{\text{IA}}{\text{TA}}}{\frac{\text{NI}}{\text{TA}}} = \frac{\text{IA}}{\text{NI}}$$

Where:

IROAI ratio = Return on Intangible Assets Ratio

IA = Intangible Assets

TA = Total Assets

ROA = Return on Assets

NI = Net Income

The "IROAI Ratio" captures the presence of intangible assets and the "abnormal" return (due to lack of intangible assets) on the assets of the companies, indicating situations where has significant absence of intangible assets.

Table 1 shows the behaviour of the IROAI ratio in four hypothetical scenarios. As can be seen, the ratio shows the lowest values in the scenario of low presence of intangible assets and high return on company assets (ROA). It is worth noting that the ROA is inflated in part by the absence of registration of intangible assets, which increases the ROA.

Table 1: Behaviour IROAI on hypothetical scenarios

Information	Scenarios			
	Low presence of IA and high ROA	Large presence of IA and high ROA	Low presence of IA and low ROA	Large presence of IA and low ROA
Total Assets	1.000.000	1.000.000	1.000.000	1.000.000
Intangible assets	50.000	500.000	50.000	500.000
Net income	150.000	150.000	15.000	15.000
Percentage of Intangible Assets	5%	50%	5%	50%
ROA	15%	15%	2%	2%
IROAI Index	0,33	3,33	3,33	33,33

In this study we aim to test that the ratio IROAI captures the effect of the presence of intangible assets not recorded and "abnormal" return (due to the absence of registration of these IAs) of the assets, indicating the absence of significant situations of intangible assets . Our expectation is to find a negative relation between Index IROAI and GI Ratio.

3.2.2 Fundamentalists Variables

In order to isolate the effect of market expectations on IROAI and enhance the explanatory power of the regression, the following variables were selected:

- Return on Equity / ROE: According to Assaf (2007), and Lopes e Ferreira (2005), this ratio measures the return on funds invested in the company by shareholders and is calculated by dividing net income divided by total shareholders' equity.
- Earnings Per Share (EPS): is a ratio widely used by investors to measure the profitability of an entity. According to Campos and Scherer (2001), this ratio indicate how profitable a venture presented by the use of the resources provided by the shareholders. According to Campos and Scherer (2001) earnings per share may be obtained dividing the net income by the number of shares outstanding.
- Book value per share (BVS): According to Bastos (2008), this performance measure is composed of the part of shareholders 'equity for each share issued at any given time, and its calculation is obtained by dividing shareholders' equity by the total number of shares.
- Price / Earnings (P / E) Ratio: According to Costa and Neves (1999) the price / earnings (P / E) ratio is determined by dividing the closing price of the share per share earnings.

All these ratios presented above provide information on the profitability of companies and are typically used by market analysts in their evaluations of investments. As the purpose of the IROAI ratio is to measure the size of the abnormality in the profitability calculation, when comparing the financial statements with the share prices on the stock exchange, the use of these financial ratios in the regression is significant

3.3 Technical Statistics

To test the null hypothesis that the variables do not explain the degree of intangibility of companies, we applied the t test of significance. According to Gujari and Porter (2011), a significance test is a procedure in which the sample results are used to verify the truth or falsity of the null hypothesis. Also was performed the F test to test the null hypothesis that all variables are not jointly significant for explaining the degree of intangibility of the companies.

In the present study we used the least squares method, which consists in building a model that aims to find the effects of the independent variables on the dependent variable, minimizing the sum of squared residuals.

The correlation matrix between variables was elaborated to detect multicollinearity. According to Gujari and Porter, 2011, correlation coefficients above 0.8 may indicate a high level of multicollinearity, which would violate the assumptions of the estimators of the regression. No worrying levels of correlation between variables was identified.

Durbin-Watson and Breusch-Godfrey tests were performed, which allowed eliminating autocorrelation hypothesis in the sample.

3.4. Delimitation of Research

This research has delimitation that should be highlighted:

- This article is not aimed to study the differences between US GAAP (United States generally accepted accounting principles) and IFRS (international financial reporting standards), and dismissed any differences, given the convergence of these standards in the theme of Intangibles Assets.
- While considering other variables, this research did not analyse the effect of other factors, which certainly have an impact to justify the difference in book value and market value of companies, for example market expectation due to future events.

4. Results

The results met partially the initial expectations that have negative relation between the degree of Intangibility (GI) and IROAI ratio. As demonstrated in table 2, the IROAI was significant and has negative relation with GI in Argentina, Brasil and México samples, which explanatory power of models is 36%, 80% e 82% respectively.

Chile, Peru and USA return insignificant results suggesting that the proxy IROAI is not applicable for those countries and it was not able to capture the abnormal results' cause by lack of assets.

Table 2: Summary of results

	(1) Argentina	(2) Brazil	(3) Chile	(4) México	(5) Peru	(6) USA
ROE	0.936 (8.596)	28.331*** (0.797)	4.177 (2.545)	9.189*** (2.445)	98.238 (63.497)	12.876*** (2.304)
BVS	-2.074 (2.269)	0.094*** (0.022)	0.000*** (0.000)	-0.171 (0.142)	0.351 (0.384)	-0.055** (0.027)
EPS	2.240 (2.881)	-0.797*** (0.133)	0.000*** (0.000)	1.126*** (0.379)	-2.516 (2.203)	-0.709* (0.376)
P / E	0.199*** (0.013)	0.048*** (0.012)	0.004 (0.004)	0.070*** (0.005)	0.557** (0.258)	*** (0.016)
IROAI	-3.789* (2.038)	-0.008* (0.004)	-0.006 (0.007)	-0.059*** 0.008	-0.083 0.418	-0.006 0.043
Observations	32	175	122	69	61	499
Predict	35.78%	79.99%	23.97%	81.59%	33.93%	88.94%

Curiously all betas of IROAI was negative. It's worth to note that, except to Chile, which return no significant variables, the E/S was significant and affects positively the degree of Intangibility (GI) in all others models.

4.1 Transformation Model VS Real-Intangible Assets Intangible Assets Expected

Based on the results presented in table 2 we developed equations of expected Intangibility Degree (GI). Based on these equation we developed a model that calculate the potential intangible assets that should be recorded. This model was obtained through replacement of expected GI for the real GI, which allows the calculation of potential "expected" intangible assets not recorded.

The steps for model transformation are shown bellow:

a) Initial regression which dependent variable, Intangibility Degree, is expected (calculated) obtained by multiplying betas of the five dependent variables and the values of the variables.

$$\bar{GI} = \beta_0 + (\beta_1 * ROE) + (\beta_2 * EPS) + (\beta_3 * BVS) + (\beta_4 * P / E) + (\beta_5 * IROAI)$$

b) Replacement of expected GI for to the GI original:

$$GI = \beta_0 + (\beta_1 * ROE) + (\beta_2 * EPS) + (\beta_3 * BVS) + (\beta_4 * P / E) + (\beta_5 * IROAI)$$

c) The ratio IROAI was split in its original formula and the intangible assets were replaced for "expected" intangible asset:

$$GI = \beta_0 + (\beta_1 * ROE) + (\beta_2 * EPS) + (\beta_3 * BVS) + (\beta_4 * P / E) + (\beta_5 * \frac{IA}{NI})$$

d) The IROAI formula was isolate:

$$GI + \beta_0 - (\beta_1 * ROE) - (\beta_2 * EPS) - (\beta_3 * BVS) - (\beta_4 * P / E) = (\beta_5 * \frac{AI}{LL})$$

e) Finally we kept isolated only the expected IA to be able to calculate the potential intangible assets not recorded:

$$\frac{LL * [GI + \beta_0 - (\beta_1 * ROE) - (\beta_2 * EPS) - (\beta_3 * BVS) - (\beta_4 * P / E)]}{\beta_5} = \bar{AI}$$

or

$$\bar{AI} = \frac{LL * [GI + \beta_0 - (\beta_1 * ROE) - (\beta_2 * EPS) - (\beta_3 * BVS) - (\beta_4 * P / E)]}{\beta_5}$$

In order to check how much the potential intangible assets not recorded would explain the differences between market and book values this model was applied only for the countries which IROAI was statically significant and only for the companies with market value above the book value (GI bigger than 1).

We assume that because we believe that the GI is a reasonable indicator of intangible assets, and, if in the future intangible assets will be allowed to record at fair value, some criteria should be verified before the recording. For this study the criteria used was the GI above 1. In future studies other criteria could be verified and better analyzed, for example, a similar criteria of IAS 12 to recorded the Deferred Tax, that requires a convincing evidence which a sufficient taxable profit will be available in the future.

Table 3 are shows the result of a model application and how much the intangible asset not recorded would explain the difference between the market and books value.

Table 3: Explanation of the difference between market and book value

Country	Percentage of IA which explains the difference between Market and Book Value					Total
	None	1% > 25%	25% > 50%	50% > 90%	90% > 100%	
Argentina	15	0	0	0	17	32
Brazil	40	0	0	0	135	175
México	22	7	8	7	25	69
Total	77	7	8	7	177	276

It is worth to note that the potential intangible assets not recorded were able to explain that more than 90% of the difference between market and book value in 177 companies, corresponding 53%, 77%, 36,2% of total companies in Argentina, Brazil and Mexico respectively.

This result reinforces the relevance of Intangible Assets and the need for a change of accounting rules or, at least, the obligation of measuring and disclose all intangible assets at a fair value.

5. Final comments

This paper studied the impact of intangible assets on the market value in Latin America countries and USA, presenting a critical perspective about the intangible assets accounting.

This study found that beta of IROAI ratio is significant in Argentina, Brazil and México, thereby demonstrating the existence of a negative relationship between the market value of companies and the lack of intangible assets recording. The results may suggest that the higher the recording of intangible assets are allowed smaller will be the difference between the value accounting and market value.

Given the relevance of intangible assets and the impact they have on the evaluation of public traded companies, it is expected that in the future the recording will be allowed, or at least, the disclosure of the fair value of internally generated intangible assets will be mandatory. Certainly, the recognition of these values will increase the relevance of accounting information to stakeholders.

This paper presented a model to indicate the existence of potential intangible assets unregistered, which allowed us to verify that the intangible asset potential unregistered, explains significantly, in some cases, the difference between the book value and market value.

It is noteworthy that this model only indicates the possible existence of relevant intangible assets not recorded in the companies, and not intended to be the basis for accounting purposes, but to promote the reflection about the adequacy of accounting rules.

Future studies could apply similar models and study in detail these Companies which indicates a material intangible assets not recorded, seeking to identify and measure each intangible assets. Others studies could be performed in other countries to verify if the IROAI is a good proxy to identify the intangible assets not recorded in other scenarios.

6 References

- ABOODY, LEV B. - The Value Relevance of Intangibles: The Case of Software Capitalization *Journal of Accounting Research*. Vol. 36, Studies on Enhancing the Financial Reporting Model (1998), pp. 161-191
- ASSAF NETO, A. *Estrutura e análise de balanços*. São Paulo, Atlas, 2007
- BASTOS, E. C., *Análise dos indicadores econômico-financeiro relevantes para avaliação de empresas*, 2008
- BELEM, V. & MARQUES, M. A influencia dos ativos intangíveis na rentabilidade do patrimônio líquido das empresas brasileiras, 12º Congresso USP de Controladoria e Contabilidade, 2012
- BEAVER, W. H.; RYAN, S. G. (1993). Accounting fundamentals of the book-to-market ratio. *Financial Analysts Journal*, 49(6), 50. Retrieved from <http://search.proquest.com/docview/219166756?accountid=34586>
- CAMPOS, G.M e SCHERER, L.M. 2001 Lucro Por Ação. *Revista Contabilidade & Finanças FIECAFI - FEA - USP*, São Paulo, FIECAFI, v.15, n. 26, p. 81 - 94, maio/agosto 2001
- COSTA, N.C.A e NEVES, M.B.E, *Variáveis Fundamentalistas e os Retornos das Ações*, RBE Rio de Janeiro, Jan/Mar. 2000
- ERNST & YOUNG, US GAAP versus IFRS, 2011. Available at: <
[http://www.ey.com/Publication/vwLUAssets/US_GAAP_v_IFRS:_The_Basics/\\$FILE/US%20GAAP%20v%20IFRS%20Dec%202011.pdf](http://www.ey.com/Publication/vwLUAssets/US_GAAP_v_IFRS:_The_Basics/$FILE/US%20GAAP%20v%20IFRS%20Dec%202011.pdf)>
- FAMA, F., 1970, "Efficient Capital Markets: A Review of Theory and Empirical Work," *Journal of Finance* 25, pp. 383-417.
- FERREIRA, A.P. e LOPES, L.N., 2005 *Indicadores Contabeis x EVA: Um estudo setorial*, FAMÁ, R.; PEREZ, M. M. *Ativos intangíveis e o desempenho empresarial*. *Revista de Contabilidade & Finanças – USP*, n. 40, p. 7 – 24, 2006
- GUJARATI, D.N. & PORTER, D.C. *Econometria Básica*. Porto Alegre, Editora Afiliada, 2011.
- KAYO, E. e FAMA, R. A estrutura de capital e o risco das empresas tangível-intensivas e intangível-intensivas, *R.Adm.*, São Paulo, v39, pp164-176, 2004
- KAM., V. *Accounting Theory*, California State University Harvard - Second Edition 1990.
- MARCONI, M. A. & LAKATOS, E. M. (2007) *Fundamentos de metodologia científica*. 6 ed. São Paulo: Atlas, 315p.
- LEV, B.; ZAROWIN, P. The Boundaries of Financial Reporting and How to Extend Them. *Journal of Accounting Research* 37, no. 2 (autumn), 1999, p.353-85.
- LEV B.; RADHAKRISHNAN S. *The Measurement Of Firm-Specific Organization Capital*. NBER Working Paper Series, Massachusetts Avenue, Cambridge, March 2003, Disponível em <<http://www.nber.org/papers/w9581>>, Acesso em 2005.

PRICEWAHTERHOUSECOOPERS, IFRS Adoption by Country, 2013. Available at:
< http://www.pwc.com/en_US/us/issues/ifrs-reporting/publications/assets/pwc-ifrs-by-country-apr-2013.pdf>

ROBERTS, H., 1967, "Statistical versus Clinical Prediction of the Stock Market", unpublished manuscript, Center for Research in Security Prices, University of Chicago.

SALAMUDIN ., BAKAR R., IBRAHIM M.K., HASSAN F.H., "Intangible assets valuation in the Malaysian capital market", Journal of Intellectual Capital, 2010, Vol. 11 Iss: 3, pp.391 - 405