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Balance sheet classification of compound financial instruments and the judgment of securities market analysts[1]

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ABSTRACT

This paper investigates the effect of balance sheet classification of a compound financial instrument on the analyst's judgment on estimates in target prices using an experimental setting. The experimental design involves both buy and sales-side analysts grouped into three subsamples with limited information set about the company used in the experiment and different information regarding the accounting for the compound financial instrument (IAS 32 model, SOA model and NEA model) after the following event: a private placement of a mandatorily convertible debenture to finance the acquisition of another company abroad. We apply nonparametric means and bootstrap test. Our result show that regardless of balance sheet classification of the compound financial instrument, analysts are likely to treat it conservatively as a liability. Moreover, if the compound financial instrument is wholly classified as a liability and the company is highly leveraged, they tend to discount firm's share price.

1.0   Introduction

One of the biggest challenges that IFRSs users face nowadays, whether they are financial statements preparers, independent auditors or regulatory bodies, is the IAS n. 32 application, endorsed in Brazil by the "Comitê de Pronunciamentos Contábeis" - CPC (the Brazilian Standard Setter) through the issuing of its rule "Pronunciamento Técnico CPC n. 39". A particular challenge is the accounting for compound financial instruments[2]. The concepts presented by IAS n. 32 are not mutually exclusive. There are many overrides in the rule. For instance, an item that should be accounted for a liability is recognized as an equity item. This is the case of "puttable financial instruments". There are other situations in which the settlement of a compound financial instrument, although being redeemed through equity securities of the own issuing company (ordinary shares,

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[2] A compound financial instrument is a non-derivative financial instrument that contains both elements of liability and equity. (IAS 32, §§28-32, AG30-AG35).

for example), requires its accounting treatment as a liability item, due to its convertibility clause (clause of variable number of shares)[3].

Besides all the difficulties regarding balance sheet classification, the measurement of these compound financial instruments also represents a challenge. Strictly speaking, a compound financial instrument must be split and its parts must be accounted for separately as a liability item and as an equity item. A compound financial instrument must be split by measuring its liability part at fair value[4] and by difference, residually, measuring its equity part (if the component passes in the framework test).

The fair value measurement of the liability item under IFRS n. 13, §42 (PT CPC n. 46 in Brazil) should consider the credit risk of the issuing company (non-performance risk) and should also consider any credit enhancement instruments (credit default swap derivatives, collateral, or personal guarantees of any kind) used to mitigate the credit risk. However, the credit risk is an unobserved variable in the market. Invariably the situation requires the fair value measurement at its 3rd hierarchical level. How should it be done? Do preparers of financial statements and professionals responsible for auditing them have the skills to deal with this? Is it enough to lie on the comfort letter of the external expert?

Thus, undoubtedly it is a hard task to apply IAS 32 in accounting for compound financial instruments. Moreover, there is a great disparity in its application, in jurisdictions that adopt the IFRSs around the world. IASB´s Board members know that there are some gaps in the Conceptual Framework in force that must be filled in. Recently, the IASB has posted on its website a public hearing of a Discussion Paper - DP to review the Conceptual Framework for Financial Reporting. In its section 5 the document addresses the issue regarding the difference between a liability item and an equity item, and proposes two debate models: Narrow Equity Approach - NEA and Strict Obligation Approach - SOA. In summary, there is more complexity to be incorporated into the IFRSs, giving a lesser importance to the cost-benefit principle, today in force in the Conceptual Framework.

Accounting for compound financial instrument in Brazil is a great challenge. There are many misunderstandings and conflicts among Brazilian stock market regulator, publicly-held companies and independent auditors. The Brazilian stock market regulator has required the restatement of some financial statements of public companies that, according to its understanding, were misleading investors and other stock market participants[5].

This study is an opportunity to investigate the reaction of market analysts from an emerging market as Brazil regarding accounting classification for a compound financial instrument. The consolidated literature in general investigates market reaction with regards to these instruments in developed markets through event studies after the announcement of public placements. So, by using market analysts as a proxy for market reaction, and applying Hopkins (1996) methodology modified, this study can get an important empirical evidence to help to solve this puzzle that is the accounting for compound financial instruments. In the authors view this aspect contributes to the originality of the paper. It must be pointed out that Brazilian sell-side analysts and Brazilian buy-side analysts play their role with the same quality standards required internationally. The experiment has investigated the experience and qualifications of them. Many are working at international institutions and the majority has been approved in a qualification exam called "ANBIMA exam".

Taking into consideration the scenario portrayed, we develop an experiment in order to investigate the effects of accounting information produced by the IAS n. 32 and by the models proposed in the IASB DP (which means NEA and SOA) on the sell-side and buy-side analysts [6]´ judgment in Brazil. Objectively, we gather empirical

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[3] IAS n. 32 in the case of the "variable conversion clause" (a strike price range) qualifies the shares issued as "currency" what requires their recognition as liabilities. In this regard see the argument in the IASB Discussion Paper 2013/1, "a Review of The Conceptual Framework for Financial Reporting" - July 2013, Appendix C, §C10, "IAS 32 Approach".

[4] In accordance with IAS n. 32, §§28-32, the liability item shall be measured at fair value on initial recognition, and the equity item shall be measured by the difference - residually - between this fair value measurement and the cost of the compound financial instrument as a whole. No gain or loss arises from the initial recognition by applying the "split accounting".

[5] http://www.cvm.gov.br/export/sites/cvm/menu/regulados/companhias/consultas/refazimento/anexos/2011/20111031-ENERGISA-SA.pdf

http://www.cvm.gov.br/export/sites/cvm/menu/regulados/companhias/consultas/refazimento/anexos/2012/20121010-MARFRIG-ALIMENTOS-SA.pdf

http://www.cvm.gov.br/export/sites/cvm/menu/regulados/companhias/consultas/refazimento/anexos/2013/20130225-MINERVA-SA.pdf

[6] The buy-side analysts do internal assessments to portfolio managers recommending the purchase or sale of securities. On the other hand, sell-side analysts work for banks and brokers. They are engaged in evaluating companies to recommend the purchase or sale of their securities to bank and broker clients. In the latter case, the interest of these institutions is to

evidence about the effects that the accounting procedure applied to the compound Financial Instruments (balance sheet classification, measurement and recognition) would have on the target prices set by market analysts. The experiment is explained in more detail in Section 4 - "Data and Methodology".

The paper is organized in the following way: section 2, which deals with literature review on the subject, where academic reference regarding the literature supporting the investigation is made; Section 3, which is a brief explanation about the accounting treatment set out in IAS 32, in NEA model and in SOA model; Section 4, which deals with data and methodology; Section 5, which deals with the results and discussions, and section 6, in which the conclusions and policy implications of the study are presented.

2.0   Literature review

In the corporate finance field, some research has been conducted focusing on the motivations behind the managers' financing and investment decisions; why capitals are raised, in some situations, from debt instruments and in other situations from equity instruments; why they invest in certain projects and not in others.

In an analytical paper, and using a model based on the game theory, Myers and Majluf (1984) explore the decision alternatives that the firm´s managers may take during its tenure. Under certain circumstances, managers may give up to raising capital by issuing shares and thereby abandon investment opportunities that increase the value of the firm, if they do not have funds in excess, what means not remunerated funds at the cost of capital ("financial slack").

The model is supported in the theory of the firm and the efficient market hypothesis in its semi-strong form. For its construction three hypothesis are formulated: (1) managers act in the interests of all shareholders, ignoring any conflict of interest between old and new shareholders; (2) managers act in the interests of the former shareholders and assume that they have a passive attitude; (3) managers act in the interests of the former shareholders, but assume that these will promote rational changes in the composition of their portfolios ("rationally rebalance") as they are aware of the actions that are taken by managers. In general, the authors work with the signaling idea. The market can interpret a new issuance of shares as "bad news" based on the assumption that "the shares are overvalued". For this reason, managers do not like being forced to raise capital through new issuance of shares because this conveys "bad news" to the market and as a consequence the share price falls (asymmetric information hypothesis). Thus, funds in excess ("financial slack") have value because they prevent managers from giving negative signals to the market (raising funds through issuance of shares) without necessarily having to give up a good investment opportunity.

Having this theoretical motivation - signaling hypothesis - event studies documented in the literature have investigated the effects of the issuance announcement of financial instruments, in particular the compound financial instruments in the market stock price. Dan and Mikkelsen (1984) in their study have found that the issues of convertible debt securities in the US market, from 1970 to 1979, were associated with negative abnormal returns and statistically significant after the announcement. Eckbo (1986) in his placements investigation in the US market of convertible debt securities and non-convertible ones, in the period 1964-1981, concludes that non-convertible debt securities on average produce zero abnormal returns, while convertible bonds are associated with negative abnormal returns and statistically significant after the announcement.

Mikkelson and Patch (1986) have conducted a study that investigated issues in the North-American market of common shares, debt securities, convertible and non-convertible debt securities and preferred shares in the period from 1972 to 1982. They have detected abnormal returns and statistically significant associated with announcement of common shares and convertible debt securities and no statistically significant results associated with the announcement of non-convertible debt securities and preferred shares. Davidson, Glascock and Schwarz (1995) assert that, empirically, events that increase leverage (issuance of debt securities or repurchase of equity securities) are associated with positive or neutral abnormal returns, while events that reduce leverage, such as issuing equity securities, are associated with negative abnormal returns. On the other hand, the issuance of a compound financial instrument is an anomaly, because, although it is associated with an event that increases leverage, it is empirically associated with negative abnormal returns. The issuance of a compound financial instrument, according to the authors, sends a signal to the market equivalent to the issue of an equity instrument ("equity-like signal").

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stimulate business; their focus is on brokerage fees. So, sell-side analysts have economic incentives to be very optimistic in their forecasts.

Ron and Veld (1998), using issuances data in the Dutch market, have noticed that the announcements of convertible debt securities are associated with positive abnormal returns, but not statistically significant. Abhyankar and Dunning (1999), working with different convertible securities issuances in the United Kingdom, from 1986 to 1996, have found that the announcements are associated with negative abnormal returns and statistically significant. Amman, Fehr and Six (2004) have investigated the convertible debt securities issuance and exchangeable debt securities[7] in the Swiss and German markets, from January 1996 to May 2003. They have concluded that they are associated with negative abnormal statistically significant returns. Stein (1982) seeking explanations for the use of convertible bonds, argues that when the issuance of a conventional shares is unattractive, the placement of convertible bonds may offer an "optimal alternative" between the negative consequences associated with the announcement of the issuance of an equity instrument and the potential financial difficulties associated with debt issuance. In the descriptive study of Swiriega and Morse (1985), the convertible debt securities accounting for were investigated. The authors have highlighted the importance of accountants considering the convertible bonds characteristics to deal with the accounting treatment conflicts of these instruments[8].

Hopkins (1996) has investigated the effect of the balance sheet classification of compound financial instruments on the buy-side analysts' judgment in the US. He conducted an experiment, gathering empirical evidence that compound financial instruments classified as equity instruments had a lower target price than those classified as liabilities. This empirical evidence is of particular importance because analysts are considered information "gatekeepers"[9] (Martinez, 2011) and their reaction has an influence over other market participants.

From another theoretical platform, it could be investigated the accounting classification of the compound financial instrument using "the debt covenant hypothesis" (Watts and Zimmerman, 1986). Firms within the limit of its contractual covenants, or indicators of liquidity/debt used for prudential regulation purposes, have incentives to practice a "balance-sheet management". And this hypothesis is particularly applicable to Brazil, given the current economic conjuncture: highly leveraged companies with long-term liabilities in US dollars, rising interest rates, loss of investment grade from three major international rating agencies, the domestic market "closed" for issuances either privately or publicly, highly volatile exchange rates, economic recession and high inflation (stagflation).

When the accounting information management occurs in the balance sheet accounts classification, we face what is called in the literature "the balance-sheet management". This type of accounting information management aims "to affect the liquidity and debt indicators, in order to adapt them to pre-set parameters, such as financing agreements (debt covenants)" (CARDOSO, 2005, p. 20), misleading the analysis of the situation of the company (PAULO, 2007, p. 64). A "balance-sheet management" that only deals with the equity accounts and liability accounts affects directly the leverage of the firm (capital structure), and as documented in the literature, it can be denominated "capital structure management", as well as defined in the Staff Accounting Bulletin of the Chief Accountant of the Brazilian SEC (CVM) and the Corporate Finance Division of the Brazilian SEC (CVM), "Ofício-Circular/CVM/SNC/SEP/n.º 01/2013 dated from February 08th 2013"[10].

The Brazilian SEC´s technical staff (CVM) issued recently another Staff Accounting Bulletin, "Ofício-Circular CVM/SNC/SEP/n. 01/2016, dated from February 18th, 2016"[11], which reinforces this question of capital structure management. When dealing with the concept of "economic compulsion", a gap in the IFRSs that has given much controversy, item 4 of the document warns that it does not make economic sense not to take into consideration the economic compulsion of a contract when someone is judging what an equity item is and what a liability item is. Events that are an actual obligation cannot become contractual rights and choices subject to the discretion of the issuer[12]. In the opinion of the technical staff of the Brazilian SEC (CVM), the economic compulsion must undoubtedly be considered in the accounting for a compound financial instrument.

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[7] The convertible debt securities are settled with own shares of the issuing company, while exchangeable debt securities are settled with shares of a third company, distinct from the issuing company.

[8] "It is time for accountants to consider the characteristics of these hybrid convertible debentures and to deal with the conflicting precedents for their accounting treatment" (SWIRIEGA e MORSE, 1985).

[9] Market analysts are considered information gatekeepers disclosed by companies. They can be seen as a filter tool, once they express opinions about the figures disclosed and sometimes they issue recommendations to buy, sell or hold company securities and their target price (sell-side in particular). Their reaction can be considered a proxy for market reaction.

[10] http://www.cvm.gov.br/export/sites/cvm/legislacao/circ/snc-sep/anexos/oc-snc-sep-0113.pdf

[11] http://www.cvm.gov.br/export/sites/cvm/legislacao/circ/snc-sep/anexos/ocsncsep0116.pdf

[12] This understanding implies the adoption of a new principle in the IFRSs: "form over substance".

In the case of compound financial instruments, Brazilian publicly-held companies that are highly leveraged (high ratio of debt-equity), with subordinated debt under assessment of rating agencies[13], and are unable to raise new capital in the market (issuance of new shares), whether by restrictive market conditions (high cost), or for the undesirable loss of control of their owners, have these instruments as an alternative to avoid breaking covenants with the contractual safeguards they need.

3.0   Accounting for compound financial instruments: IAS 32, NEA e SOA

The IAS n. 32 - Financial Instruments: Presentation - deals among other things with compound financial instrument, giving guidance to IFRSs users to measure, split and present it in the balance sheet. It is true that interpreting and applying properly IAS n. 32 is a challenge for the accounting profession (preparers and auditors of financial statements). One example is the situation in which a compound financial instrument issued can be settled with equity instruments of the issuing company, when the convertibility rule must be observed (i.e. "fixed-for-fixed" rule). This situation, according to the rule in force (IAS n. 32), can give rise to the classification of the compound financial instrument as a liability item or and equity item. It will depend on the assessment of the equity instruments to be used to settle the instrument; if they may be qualified as "currency" (see Appendices 1 and 2).

The IASB, aware of the challenge that represents the IAS n. 32 for the IFRSs users, posted in 2013 in its website a public hearing of a Discussion Paper - DP to review the Conceptual Framework for Financial Reporting. Item 5 of the DP deals with the distinction between a liability item and an equity item and proposes two models for debate: the Narrow Equity Approach - NEA and the Strict Obligation Approach - SOA.

The NEA model requires that financial statements' preparers make the distinction between a liability item and an equity item taking into consideration their assessment of the latter. According to the NEA model it is only considered an equity item the most residual class of equity instruments[14]. Everything else that does not fit as an equity item will be considered a liability item (it is the use of "set theory" to equity items). This means that if the company has securities issued among common shares, preferred shares and own share options, for instance, only common shares will be considered an equity item according to the NEA model.

On the other hand, if an entity has issued only securities that are considered a present obligation to deliver economic resources in the future, as consequence of a past action, which would fit a liability concept (a Collective Investment Contract - CIC in Brazil, for example) and this instrument is considered the most residual class of securities issued, hence it will be accounted for as an equity item in the shareholders´ equity group.

The SOA model requires that financial statements´ preparers distinguish firstly the liability item´s characteristics. Everything else that does not fit as a liability item will be considered an equity item (it is the use of "set theory" to liability items). It must be pointed out that, according to the DP, it can only be considered a liability item a present obligation for future delivery of economic resources[15]. If there are compound financial instruments that may be settled by the delivery of primary claims or secondary claims of equity instruments issued by the issuing company (which is not considered economic resource, according to the DP, § 3:38 "b"), and it is more likely than not that this happens (remote probability of settlement occurs in cash or other economic resources), these instruments, according to the SOA model, will be considered an equity item, regardless of the conversion clause (the "fixed-for-fixed" rule is ignored). The IASB has elected SOA model a benchmark in the DP.

4.0   Data and methodology

4.1   Design of the experiment

The experiment with securities analysts in Brazil had its motivation in Hopkins work (1995). The idea was to replicate it with some methodological adjustments to investigate the effects of balance sheet classification of mandatorily convertible debentures - a compound financial instrument that has been placed privately by

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[13] http://g1.globo.com/economia/negocios/noticia/2015/12/moodys-coloca-nota-de-empresas-do-brasil-em-revisao.html ; http://g1.globo.com/economia/noticia/2015/10/apos-rebaixamento-do-brasil-fitch-revisa-tambem-notas-de-empresas.html;   http://fatoonline.com.br/conteudo/16572/apos-revisar-rating-do-brasil-sandp-revisa-nota-de-credito-da-petrobras?or=i-not&p=re&i=1&v=0

[14] "The narrow equity approach would: (a) classify as equity only existing equity instruments in the most residual existing class of equity instruments issued by the parent." *Discussion Paper*, § 5.30.

[15] "The strict obligation approach would classify as liabilities only obligations to deliver economic resources." *Discussion Paper*, § 5.34.

Brazilian publicly held companies - on the judgment of analysts on target prices. The experiment had the aim to assess the effects of IAS 32, SOA and NEA models.

The first step of the work was getting support from representative entities of the Brazilian capital market. Hence, two meetings were held with organizations representing the sell-side analysts and the buy-side analysts. There was a meeting held in São Paulo, on August 14th, 2013, with the APIMEC board, to discuss the research with the sell-side analysts and there was a meeting held also in São Paulo, on September 12th, 2013, with ANBIMA´s equity fund managers, to discuss the research with the buy-side analysts. Once having the institutional support, the experiment was put in place.

Objectively, this is an experiment that aims to get a target price of a fictitious company[16] from the interviewed analysts (buy-side analyst and sell-side analyst), after a specific event, namely a private placement of a mandatorily convertible debenture, issued to finance the acquisition of a competitor company abroad. Thus, the sampled analysts received a limited information set (financial statements of the company, time series of the last 30 daily prices with the company's share, prospectus information disclosure, among others).

Respondents were sub-sampled into three groups: analysts with input information from IAS 32 model; analysts with input information from NEA model and analysts with input information from SOA model. One of the controls of the experiment was to keep in the same sub sample the analysts that are linked to or that work in the same entity, to avoid crossing information among them and "noise". Analysts were selected from data disclosed by APIMEC and by ANBIMA.

The input information mentioned in the previous paragraph comprehends the financial statements of the fictitious company, adjusted with the figures of the mandatorily convertible debenture. A private placement of 2.5 billion of Brazilian Reais accounted for in compliance with IAS 32 model, SOA model and NEA model. Strictly speaking, whatever the accounting model used, a compound financial instrument must be bifurcated and its items must be presented separately between a liability item and an equity item. The bifurcation measurement of the instrument must take into consideration the fair value of the liability item (future cash flows discounted at a rate that considers the credit risk[17] of the issuing entity).

The equity item is measured residually by difference between the cost of the whole instrument and the fair value of its liability item. Conceptually, it makes sense, because equity interest represents a residual interest in the company´s net assets. Considering what is documented in the literature, the following research questions were formulated: Q1. Does the balance sheet classification of the compound financial instrument impact company's target price? Are there differences of target prices among sub-sample groups? Q2. Does the less conservative classification of the compound financial instrument (equity) imply "bad news"? On the other hand, does the most conservative classification (liability) imply "good news"? Q3. How are the compound financial instruments seen by analysts? Liability or equity?

4.2   Measurement of the compound financial instrument

The mandatorily convertible debentures, issued on July 15th, 2010, comprehend a debt instrument ("host contract") with two embedded derivatives: (i) a put option whose holder is the issuing company, to be exercised at maturity date ("European option"), at an expected strike price of 24.50 Brazilian Reais per share (there is a range of strike prices), against the holder of the mandatorily convertible debentures and (ii) a call option whose holder is the holder of the mandatorily convertible debentures, to be exercised at any time ("American option") against the issuing company, at an expected strike price of 24.50 Brazilian Reais per share (there is a range of strike prices), adjusted by future cash flows discounted (future cash flows linked to "interest falling due"), in the case of the issuer's default in its obligation to pay interest periodically.

Considering the liability component of the compound financial instrument, this includes the obligation to deliver future cash flows to the instrument´s holder, which comprehends the principal at maturity date (July 15th, 2015), at the amount of R$ 2.5 billion of Brazilian Reais, and annual interest payments on July 15th of each year, calculated on the principal, based on 100% of the accumulated variation of the average interest basic rates of the

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[16] Strictly speaking, it is a Brazilian company which has placed privately a mandatorily convertible debenture with a qualified investor in Brazil, whose name we decided to omit in order to avoid influencing the experiment..

[17] To calculate the entity's credit risk it was used the model developed by Mellone Jr., Eid Jr. and Rochman (2002). Some OLS regressions were run using the credit spread as a dependent variable and the credit risk ratings given by rating agencies and the debentures maturity as explanatory variables. Dummy variables to control the guarantees (secured or unsecured) were not included in the OLS regressions due to these variables have been considered without statistical significance by Mellone Jr., Eid Jr. and Rochman.

market ("average interest rates of 1 day Inter-financial Deposits - DI"), plus a contractual spread of 1%. Due to the hypothesis of a private placement of a tailor-made instrument, for its measurement at fair value it was adopted the income approach (PT CPC n. 46 / IFRS n.13).

Observable Input– hierarchy level 2: free interest rate risk.
In order to project the cash flows arising from periodic interest, quotations of futures contracts of "1 day DI" traded on the BM&FBovespa were used. Table 1 below shows futures contracts prices, obtained on July 15th, 2010 (date the debentures´ issuances).

Table 1: Quotation Future Contracts "1 day DI"

Contract	quotation
N2011	11,560%
N2012	11,920%
N2013	12,000%
N2014	12,110%
J2015	12,130%
N - maturing in July	
J - maturing in April	

On July 15th 2010, there was not "1 day DI" future contracts maturing in July 2015 and traded on the exchange. As a proxy, the future contract with the nearest maturity was used. In the case the "1 day DI" future contract maturing in April 2015.

Based on the spot interest rates traded, it was possible to identify the term structure of interest rates for the period. Thus, the forward interest rates were obtained to be used for the interest computation (future cash flows) to be paid to the debenturers´holders. These are presented below in Table 2.

Table 2: Term structure of interest rates

Years	quotation1 day DI July 15th 2010	
	spot	forward
1	11,560%	11,560%
2	11,920%	12,281%
3	12,000%	12,160%
4	12,110%	12,441%
5	12,130%	12,210%

Aaggregating the spread of 1% and the forward rates identified, it is possible to project the interest for each pay period. Table 3 summarizes the data.

Table 3: Projected interest

Quotation "1 day DI" Future Contracts			
Maturity	CDI forward	Spread - Deb.	Interest
July 2011	11,56%	1,00%	12,56%
July 2012	12,28%	1,00%	13,28%
July 2013	12,16%	1,00%	13,16%
July 2014	12,44%	1,00%	13,44%
April 2015	12,21%	1,00%	13,21%
Source: Time series BMFBovespa on July 15th 2010.			

Hence, using the information obtained from an observable input (market interest rates) the liability component of the compound financial instrument can be measured at fair value. Future cash flows are projected (coupons to be paid to the holder). The following Table 4 clarifies the numbers.

Pricing future cash flows: Projected Coupon.

The critical question that arises now concerns the appropriate discount rate to be used. In order to discount projected cash flows the discount rate must consider besides the risk free rate the non-performance risk. So what would the non-performance risk be considered?

The appropriate discount rate can be identified by using a public issuance from the same company. Thus, based on information from a public offering of non-convertible debentures issued by the company, it can be identified a discount rate of 127.6% of "1 day DI", for a 4- year maturity debenture, placed on January 18th 2011.

Table 4: Coupon projected

		Debentures	250.000
		unitary value	10.000,00
		issue amount	2.500.000.000,00
Coupons priced based on the term structure of interest rates, obtained from future contracts "1 day DI", on July 15th 2010.		$Coupon_{2011}$	314.000.000,00
		$Coupon_{2012}$	332.029.042,67
		$Coupon_{2013}$	329.004.289,80
		$Coupon_{2014}$	336.016.215,97
		$Coupon_{2015}$	330.250.892,14

Observable Input– hierarchy level 2: non-performance risk from another issuance of the same company (non-convertible debt placed publicly).

Objectively this is an observable input in the market, once it was gotten from a placement of debentures issued by the company, non-convertible ones ("pure debts"), publicly placed (at market rates) and with the "book building procedure" (investment intentions gathered from public investor). One problem that can arise with this expedient is the bias risk in the discount rate. If the non-performance risk had changed, the discount rate based on the public placement of 2011 would not have been appropriate. However, through an announcement to the market in 2011 the company disclosed the information that its credit risk rating was kept by the rating agencies. As in 2010, its credit risk rating was BBB + national scale in 2011.

Thus, the non-performance risk is obtained from confrontation of the cost of the placement 127.60% (issuance on March 4th 2011) with the "1 day DI" market spot rates, with quotations on **July 15th 2010**. The following table 5 shows the figures.

Table 5: Non-performance risk of the company

Proxy: public issuance on March 4th 2011			
Cost issuance		**127,6% DI**	
Date	"1 day DI" spot	Non-performance risk	Discount Rate
July 15th 2011	11,56%	3,19%	14,75%
July 15th 2012	11,92%	3,29%	15,21%
July 15th 2013	12,00%	3,31%	15,31%
July 15th 2014	12,11%	3,34%	15,45%
April 15th 2015	12,13%	3,35%	15,48%

So it is observed a non-performance spread around 3.3%. Gathering other evidences to support the 3.3% spread of the company, the data regarding public placement of non-convertible debentures ("pure debts") in the year of 2010[18] are extracted from the Brazilian SEC database. All the public offerings of non-convertible debentures electronically filed with the Brazilian SEC, whose series had the "1 day DI" as a reference of risk free interest rate, and taking into consideration their maturity dates and the credit risk ratings given by rating agencies.
Unobservable Input – hierarchy level 3: The non-performance risk built from all public offerings of non-convertible debentures in 2010, *vis-à-vis* their credit ratings and their maturity dates.

Based on this information, and using the pricing model for debentures, developed by Mellone Jr., Eid Jr. and Rochman from the Study Center in Finance of EAESP/FGV-SP[19], some OLS regressions can be run. The dependent variable is the spread and the explanatory variables are the credit risk ratings and the maturities dates[20].

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[18] Placements with restricted efforts (Brazilian SEC Rule n. 476/2009) did not compose the sample because such information are still filed with CVM on paper and not electronically. The placements with restricted efforts are aimed to qualified investors.
[19] MELLONE JR., Geraldo; EID JR., William; ROCHMAN, Ricardo Ratner. Determinação das taxas de juros das debêntures no Mercado brasileiro. Digital Library of FGV.
[20] Dummies variables to control the guarantees (secured or unsecured) were not included in the OLS regressions due to these variables have been considered without statistical significance by Mellone Jr., Eid Jr. and Rochman.

The spreads sample is shown below in Table 6.

Table 6: Spreads sample

Spread	S&P	Moodys	Fitch	Maturity	Scale
0,30%	0	Aaa.br	0	4	0,95
1,95%	0	A1.br	0	5	0,90
1,65%	BrA+	0	A+(bra)	4	0,76
1,85%	BrA+	0	A+(bra)	5	0,76
1,15%	BrAAA	0	0	4	0,95
1,15%	BrAAA	0	0	5	0,95
1,30%	0	Aa1.br	0	5	0,90
1,50%	0	Aa2.br	0	6	0,86
1,20%	BrAAA	Aaa.br	0	4	0,95
1,20%	0	Aa2.br	A+(bra)	5	0,86
1,25%	BrAA	Aa2.br	A(bra)	4	0,86
1,95%	BrAA-	0	0	5	0,81
1,40%	BrAA-	0	0	3	0,81
1,70%	0	Aa3.br	0	5	0,81
1,70%	0	Aa3.br	0	5	0,81
1,50%	0	Aa1.br	0	5	0,90
1,60%	0	Aa2.br	0	5	0,86
1,60%	BrAA-	0	0	4	0,81
0,90%	0	Aa1.br	0	2	0,90
2,00%	0	0	A+(bra)	4	0,76
1,30%	0	0	A(bra)	4	0,71

Thus, using an econometric package, it is possible to run an OLS regression, with 20 of the 21 sampled observations[21]. Through this procedure, it is obtained a 3.67% spread for non-performance risk of the company in 2010. The results are shown in Table 7.

Table 6: OLS regression

Rating: BBB+ (bra)				
OLS Regression (FGV paper) spread x credit rating				
Dependent Variable: SPREAD	Spread	**3,67%**		
Method: Least Squares				
Date: 07/12/12 Time: 09:12	$Spread = 0,028651 - 0,000246 \times [Rating] + 0,001602 \times [Maturity]$			
Sample(adjusted): 1 20	$R^2 = 0,490905$			
Included observations: 20 after adjusting endpoints				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0,028651	0.006994	4.096.778	0.0008
Maturity	0,001602	0.000607	2.638.127	0.0173
Scale (credit rating)	-0,000246	7.74E-05	-3.184.148	0.0054
R-squared	0.490905	Mean dependent var		0.014925
Adjusted R-squared	0.431011	S.D. dependent var		0.003109
S.E. of regression	0.002345	Akaike info criterion		-9.135.522
Sum squared resid	9.35E-05	Schwarz criterion		-8.986.162
Log likelihood	9.435.522	F-statistic		8.196.286
Durbin-Watson stat	1.754.563	Prob(F-statistic)		0.003220

That result corroborates the non-performance risk at level 2 for 2011 (3.3% spread), since the spread estimated for 2010 is 3.67%. Hence, the non-performance risk obtained at the hierarchical level 2 (observable) is very close to the non-performance risk obtained at the hierarchical level 3 (unobservable), with an insignificant difference. So, the discount rate used comes from table 5.

Applying IAS 32 to accounting for the debenture, the principal to be settled with the own shares of the company, in a variable conversion clause or in cash, would be classified as a liability. The entity's contractual obligation to make future payments remains outstanding until it is extinguished through conversion, instrument maturity or some other transactions. Moreover, the settlement through conversion in this case is considered a "currency" in accordance with IAS 32, because it is not under the criteria "fixed-for-fixed"[22]. Interest would be classified also

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[21] The observation 1 which is on the second series of a public placement of the Issuer X was excluded because it was considered an outlier. Running the OLS regression with the Issuer X we obtain a credit spread of 4.37% for the company.
[22] The strike price of the embedded option is in a conversion range.

as a liability. And the embedded options, which underlying items are shares would be classified as an equity item.

Adopting Strict Obligation Approach (SOA), and with the premise that it is more likely than not that the principal will be settled in own company´s shares, regardless the strike price is under "fixed-for-fixed" rule or not, it must be accounted as an equity item, as well as the embedded options. The future cash flow with interest must be classified as a liability.

Finally, in the case of Narrow Equity Approach (NEA), only the equity instruments issued by the company, classified as the most residual class among equity instruments would be considered an equity item. It means "common shares". The other financial instruments would be classified as a liability. Therefore, the whole debenture (2.5 billion of Brazilian Reais) would be accounted for as a liability item.

Thus, the financial statements used in the experiment and sent to analysts had an adjustment column to recognize the event "private placement of the mandatorily convertible debenture", and that was accounted for according to each accounting approach used. Table 8 below shows the numbers.

Table 8: Approach for balance sheet classification of compound financial instruments (in billions of Brazilian Reais)							
SOA model			IAS 32 model			NEA model	
Principal	1,212		Principal	1,212		Principal	1,212
Embbeded options	0,206		Interest	1,081		Interest	1,081
Shareholders equity	1,418.	56,73%	Liability	2,293	91,75%	Embbeded options	0,206
Interest (Liability)	1,081	43,27%	Embbeded options (Shareholders equity)	0,206	8,25%	Liability	2,500	100,00%
Total	2,500	100,00%	Total	2,500	100,00%	Shareholders equity	-0-	0,00%

The full information set available to the three analyst groups surveyed comprehends financial statements, time series of company´s stock prices (30 trading days prior to the event), placement prospectus with information about the market in which the company operates, the purpose for the raising funds (acquisition of a concurrent company in the market, aiming to increase market share), among others. Based on that information set disclosed, quantitative and qualitative information were obtained from analysts, through a structured survey in "Survey Monkey" platform® (https://pt.surveymonkey.com/).

In order to run the survey with the analysts, 15 questions were formulated, with the aim of getting, among other information: (i) the company's target price after the event; (ii) basis for the judgment for setting the target price; (iii) the type of recommendation given by the analyst after the event (buy, sell or hold); (iv) the expected effect in the stock price, after the event announcement (increase, decrease or maintenance); (v) if the analyst has any certification; (vi) how long the analyst is certified and his professional experience; (vii) computation of debt-equity ratio, letting the analyst manipulate the number (classifying the parts of the compound financial instrument as his judgment); (viii) assign a score from 1 to 10 for the mandatorily convertible debenture, being 1 for a non-convertible debt instrument ("pure debt") and 10 for common shares; (ix) the expected effects in stock prices (increase, decrease or maintenance), in line with literature, when there is a new issuance in new shares or in debt securities.

5.0   Results and discussion

The universe of sell-side and buy-side analysts, for which the questions were sent, included thirty seven associate APIMEC´s analysts and forty seven ANBIMA´s associate analysts. The best efforts were made to obtain data from the most number of analysts and to convince them to take part in the survey. For instance, it was received support from Brazilian SEC, APIMEC and ANBIMA. It also should be mentioned that some phone calls were made in three opportunities to convince them and email messages were sent in four opportunities, describing the experiment. Thus, the percentage of responses was 32.43% (12/37) for the sell-side analysts and 4.26% for the buy-side analysts (2/47). In summary, the experiment has reached a percentage of 16.67% of responses (14/84).

It was gathered quantitative evidence from the sampled analysts, in order to check if their target prices had differences and if they were statistically significant and in line with the literature, taking into consideration the balance sheet classification of the compound financial instrument. It was also obtained qualitative evidence from the sampled analysts, in order to check if the analysts would re-classify parts of the compound financial instrument at their discretion. It was also requested that analysts assign scores to the compound financial instrument as a whole, from a scale of 1 (non-convertible debt securities) to 10 (common shares).

5.1   Quantitative analysis of the experiment: Target prices

Each analyst was asked to provide a target price for the fictitious company based on the information set available to them. This was the question (i) of the experiment. It must be mentioned that among other information they have received the company financial statements and the time series of the company's share price. It also must be pointed out that in the last 6 trading sessions the company's share price was $ 16.72 (d-1); $ 16.67 (d-2); $ 16.87 (d-3), $ 16.57 (d-4), $ 16.97 (d-5) and $ 17.07 (d-6). It was obtained 14 target prices, for the three groups (IAS 32, NEA and SOA). A summary of the numbers is shown in table 9 below.

Table 9: Target prices for each group			
Responses	IAS 32	NEA	SOA
1	16,05	15,00	15,75
2	16,70	15,00	12,43
3	17,55	15,88	16,72
4		15,00	24,13
5		16,72	17,00
6		9,39	
observations:	3	6	5
mean:	16,77	14,50	17,21
median:	16,70	15,00	16,72
Standard deviation:	0,75	2,60	4,28

There is an interesting aspect here. All the groups received the same information set, except in relation to the balance sheet, which had 3 different accounting models (see Table 8). The way the compound financial instrument was accounted impacted the target price of the company. Thus, it was possible to compare the mean and median for each sample:

Mean NEA (14,50) < mean IAS 32 (16,77) < mean SOA (17,21)
Median NEA (15,00) < median IAS 32 (16,70) < median SOA (16,72)

Two statistical tests were run for the analysis of the differences among the target price mean of each group (NEA x IAS32 x SOA): the nonparametric mean test and "bootstrapping".

5.1.1   Differences among target price means (NEA x IAS32 x SOA)

Initially, due to the small sample and due to the fact that data is not normally distributed, it was applied the nonparametric Kruskal-Wallis test, to check whether there is any difference among the group means, as shown in Table 10 below. The nonparametric Kruskal-Wallis test is equivalent to the parametric ANOVA test, and it should be run when the data do not exhibit normal distribution.

Table 10: Kruskal-Wallis' outputs test		
Groups	N	Rank (Mean)
(IAS 32)	3	10,00
(NEA)	6	5,08
(SOA)	5	8,90
Total	14	
Chi-Square:		3,674
Df:		2
Asymp. Sig:		0,159

The Kruskal-Wallis test outputs a p-value of 0.159, which is higher than the limit of 5% and the limit of 10% of significance. This result indicates that the groups have similar distributions. Therefore, the difference observed among group means was not statistically significant, what means that the means are not statistically different.

Regarding the paired tests, in which the differences are tested between two samples (IAS32 x NEA, IAS32 x SOA and NEA x SOA), it was run the Mann-Whitney's nonparametric test, whose results are presented in Tables 11, 12 and 13 below.

Table 11: Difference between means (Target Prices): IAS 32 x NEA			
Groups	N	Rank (Mean)	Rank (Sum)
(IAS 32)	3	7,33	22,00
(NEA)	6	3,83	23,00
Total	9		
		Mann-Whitney U:	2,000
		Wilcoxon W:	23,000
		Z:	-1,838
		Asymp. Sig (2-tailed):	0,066
		Exact Sig.[2*(1- tailed Sig.)]:	0,095

According to the outputs shown in table 11, it is obtained a p-value of 0.09 indicating that the difference between target price means (IAS 32 x NEA) is statistically significant at 10%.

Table 12: Difference between means (Target Prices): IAS 32 x SOA			
Groups	N	Rank (Mean)	Rank (Sum)
(IAS 32)	3	4,67	14,00
(SOA)	5	4,40	22,00
Total	8		
		Mann-Whitney U:	7,000
		Wilcoxon W:	22,000
		Z:	-0,149
		Asymp. Sig (2-tailed):	0,881
		Exact Sig.[2*(1- tailed Sig.)]:	1,000

According to the outputs shown in table 12, it is obtained a p-value of 1.00 indicating that the difference between target price means (IAS 32 x SOA) is not statistically significant.

Table 13: Difference between means (Target Prices): NEA x SOA			
Groups	N	Rank (Mean)	Rank (Sum)
(NEA)	6	4,75	28,50
(SOA)	5	7,50	37,50
Total	11		
		Mann-Whitney U:	7,500
		Wilcoxon W:	28,500
		Z:	-1,385
		Asymp. Sig (2-tailed):	0,166
		Exact Sig.[2*(1- tailed Sig.)]:	0,177

According to the outputs shown in table 13, it is obtained a p-value of 0.177 indicating that the difference between target price means (NEA x SOA) is not statistically significant.

5.1.2   Bootstrapping target price means

Looking for more evidence, the bootstrapping test was carried out. The bootstrapping is a resampling technique and can be applied in different situations, but it is used with some frequency when the researcher deals with small samples. Basically, the bootstrapping technique requires the generation of a new data set by resampling the original dataset (EFRON and TIBSHIRANI, 1993). As Lepage and Billard (1992) points out, besides evaluating the parameters estimates, bootstrapping is important to get adequate standard errors estimates generated by the distribution parameter estimates through resampling interactions.

In summary, bootstrapping is a resampling technique that is carried out from a master sample. It is called non-parametric probability distribution when the statistical parameter to be estimated is unknown. Thus, by resampling, you can obtain the parameter of the sample distribution from the original sample.

The variability of the parameter of the sample distribution calculated by bootstrapping will depend on the choice of the master sample and will also depend on the amount of resamples generated. Thus, in order to generate reliable values using bootstrapping, it must be generated hundreds or even thousands of resamples with the same size from the sample master. Usually, the literature recommends the use of one thousand (1.000) resamples. From the generated samples, a bootstrap distribution is obtained for the parameters, and from this distribution central tendency measures and variability measures can be calculated, such as the distribution´s standard deviation.

In this research, the use of bootstrapping will be necessary to complement the analysis carried out using nonparametric test of difference between target price means. Its purpose is the generation of a sampling distribution of the parameters of each target price group. Thus, to calculate the statistical difference between target price means, with paired samples (IAS32 x NEA, IAS32 x SOA and SOA x NEA), the bootstrap method of "percentile confidence interval" was applied. According to Efron (1986), for one confidence interval (1 - α).100%, the (1 - α/2).100% percentile and the (α/2).100% percentile of the means of the differences should be found. Consequently, it is expected that in the confidence interval will not be observed the value 0 (zero), indicating that the difference is statistically significant at the chosen level α.

To calculate the differences between the target prices means 10.000 (ten thousand) resamples were generated for each pair (IAS 32 x NEA, IAS32 x SOA and NEA x SOA) and it was used the level α of 10% of significance, what means 5% of significance for each distribution tail. Table 14 shows the results below.

Table 14: Difference among means (Sample: Bootstrapping)			
Item	IAS32 - NEA	NEA - SOA	IAS32 - SOA
Resampling	10.000	10.000	10.000
Mean	2,27	2,71	0,44
α	10%	10%	10%
Lower limit (5%)	1,20	1,34	-1,95
Upper limit (95%)	3,28	4,10	2,90
Difference among Means	**Yes**	**Yes**	**No**

In the table above, the results of the bootstrap method are disclosed. It was run on the difference between the target price means of the paired samples. As shown, it is noticed that two differences were significantly different. The target price means between IAS32 and NEA was different at 5% as well as it was between IAS32 and SOA.

The samples' outputs generated by bootstrapping have confirmed the outputs of the nonparametric test of means, indicating that the differences between the target price means of IAS32 and NEA samples are statistically significant. It was the also the case when the bootstrap method was applied to the paired sample NEA and SOA. As it has already been indicated by the nonparametric test, the bootstrap method has confirmed that there are no significant differences statistically between the target price means of NEA and SOA. Nonetheless, the outputs of the samples generated by bootstrapping regarding the paired sample IAS32 and SOA have not confirmed the results of the nonparametric test of means. The bootstrap method has indicated significant differences statistically between the target price means of IAS32 and SOA. It is not the case of the nonparametric test of means, what suggests that a carefully analysis must be conducted.

Comparing these results with Table 8, we can conclude that analysts have penalized more in terms of the target price the most conservative accounting for the compound financial instrument. For accounting purposes, the most conservative model was the NEA (100% of the compound financial instrument recognized as liabilities), followed by IAS 32 (91.75% of the compound financial instrument recognized as liabilities) and followed by the SOA (43.27% of the compound financial instrument recognized as liabilities).

This finding does not confirm what the literature of this field of study has documented. The expected result would be SOA <IAS 32 <NEA. Hopkins (1995) in his experiment detected lower target prices for the compound financial instrument classified in shareholder's equity compared with those classified as liabilities. And the event studies mentioned in this paper have supported the idea that equity securities, as a rule, are associated with negative abnormal returns and statistically significant, while debt securities are associated with positive or neutral returns. This presents a truly puzzle.

Seeking explanations to understand this result, we face the question (ii) of the experiment. It is requested of the analyst that briefly justifies its motivation on his judgment in determining the target price. Analyzing the responses of the NEA group (the most conservative accounting procedure), whose target price was the most penalized, the analysts have mentioned as a basis for judgment: (1) the dilution possibility, which brings out the equity-like signal mentioned by Davidson, Glascock and Schwarz (1995); (2) the lack of information on the acquired company, which would allow to estimate potential synergies; (3) the fact that the operation with the debenture has a questionable purpose (remembering that the fictitious company was highly leveraged before the issue of the compound financial instrument); (4) the fact that the great part of the net income will be used to pay the debt interests; (5) the fact that the costs for business integration and mandatory convertibility will not increase nor decrease the share value; (6) the fact that the mandatory conversion will dilute price per share.
Focusing on the IAS 32 group, the inputs are: (1) the capital dilution by the debentures convertibility; (2) the leverage level, the dilution risk in the future and the lack of information about the acquired company; (3) the leverage level and the lack of information about the acquired company.

Finally, for the SOA group, the answers are: (1) the debt increase in a short term; (2) a very large volume of debentures in relation to the company size and as consequence of being convertible it would decrease target price (dilutive aspect); (3) a neutral assessment because analyst did not know information about the company in previous acquisitions; (4) a time series model was used to estimate price; (5) the fact that the company looks for increasing its operational performance through financial leverage.

Analyzing these inputs, we could extract that the most frequent valuation drivers used by the most analysts are "leverage" and "future dilution". Based on this evidence, we can present a plausible explanation for the target prices estimated by the analysts. The NEA model was the most penalized with regards to target price because it is the accounting model that increases more than any other one the leverage of the company (remembering that the fictitious company is on the limit of its covenants). Following this rule, we have in the order the IAS 32 model and the SOA model.

5.2   Qualitative analysis of the experiment: Classification of the compound financial instrument

An interesting information is presented in Table 15 below, extracted from the question (vii) of the experiment, in which the analyst has the discretion to make accounting reclassifications of the company's figures and also has the choice to prepare its own debt ratio (liabilities/equity).

Table 15: Reclassification of parts of the compound financial instrument						
	Derivatives		Principal		Interest	
	n	%	n	%	n	%
Numerator	2	15,38%	2	15,38%	2	15,38%
Denominator	0	0,00%	0	0,00%	0	0,00%
IAS 32	**2**	**15,38%**	**2**	**15,38%**	**2**	**15,38%**
Numerator	6	46,15%	4	30,77%	6	46,15%
Denominator	0	0,00%	2	15,38%	0	0,00%
NEA	**6**	**46,15%**	**6**	**46,15%**	**6**	**46,15%**
Numerator	4	30,77%	4	30,77%	5	38,46%
Denominator	1	7,69%	1	7,69%	0	0,00%
SOA	**5**	**38,46%**	**5**	**38,46%**	**5**	**38,46%**
TOTAL	**13**	**100,00%**	**13**	**100,00%**	**13**	**100,00%**

So, regardless of the accounting model used (NEA, IAS 32 or SOA), the most of the analysts understand the parts of mandatorily convertible debentures as liabilities, no matter if we are talking about the embedded derivative, principal or interests. They have classified them in the debt ratio numerator. In the IAS 32 group, the embedded derivative which was originally classified in the shareholder's equity was reclassified to liabilities by two analysts of the sample group. In the NEA group (100% liabilities) it was observed the reclassification of the principal to shareholder's equity by only two analysts (dilutive aspect). Finally, in the SOA model, four analysts have reclassified the embedded derivative and principal originally classified in shareholder's equity to liabilities. There was one missing value for this question, which justifies the thirteen observations from a total of fourteen analysts surveyed.

Table 16: Assessment of the Compound Financial Instrument				
Scale	IAS 32	NEA	SOA	Total
1	1			1
2				0
3		1		1
4	1		1	2
5		2	2	4
6				0
7		2	1	3
8			1	1
9		1		1
10				0
TOTAL	**2**	**6**	**5**	**13**

Another relevant information is obtained with the question (viii) of the experiment, which requests analysts to give a rating to the mandatorily convertible debenture, within a scale of 1 (non-convertible debt securities) to 10 (common shares), knowing that the compound financial instrument has characteristics of both liabilities and equity. There was one missing value for this question too. Table 16 displays the results. The results of table 16

shows that 61.54% of analysts (8/13) have attributed ratings close to pure debt security (range 1 to 5) and 38.46% of analysts (5/13) have attributed ratings close to common shares (range 6 to 10). The other questions have served as a control tool to test the knowledge and skills of analysts (conceptual basis) and their professional experience. The results were judged satisfactory for experimental validation.

6.0   Conclusion and policy implications

In the finance and accounting literature, the compound financial instruments still need further study so accountants and finance people understand better their economic motivations; why they are issued sometimes publicly and sometimes privately. As advocated by some researchers, the compound financial instruments today are a puzzle to be solved in terms of theory and hypothesis.

This paper aims to fill part of this knowledge gap, when investigates the effect of the balance sheet classification of a compound financial instrument issued in the Brazilian market with a certain frequency - a mandatorily convertible debenture - on the judgment exercised by sell-side analysts and buy-side analysts on target prices.

The sell-side and buy-side analysts' universe, for which the questions were sent, included thirty-seven APIMEC´s associate analysts and forty-seven ANBIMA´s associate analysts. The best efforts were made to obtain data from the most number of analysts and to convince them to take part in the survey. Thus, the percentage of responses was 32.43% (12/37) for the sell-side analysts and 4.26% for the buy-side analysts (2/47). In summary, the experiment has reached a percentage of 16.67% of responses (14/84).

Fourteen analysts (twelve sell-side and two buy-side) were grouped into three subsamples who received a limited information set about the fictitious company used in the experiment and also received different stimulus regarding accounting information (IAS 32 model, SOA model and NEA model), after the following event: a private placement of a mandatorily convertible debt to finance the acquisition of another company abroad.

The literature documents some event studies that show that events that increase leverage (issuance of a debt security or a repurchase of equity securities) are associated with positive or neutral abnormal returns, while events that reduce leverage, such as the issuance of equity securities, are associated with negative abnormal returns. The issuance of a compound financial instrument is an anomaly, because although it is associated with an event that increases leverage, it is empirically associated with negative abnormal returns. The issue of a compound financial instrument, as per some authors, sends a signal to the market equivalent to the issue of an equity instrument ("equity-like signal").

This paper contributes with the literature by bringing new evidence on the subject. Considering the results, the research questions can be answered. Q1. Does the balance sheet classification of a compound financial instrument impact the company's target price? Objectively, are there differences between target price means? Answer: Yes, it does. And there are differences between target price means, but there are only significant differences statistically between IAS 32 and NEA (Mann-Whitney test and Bootstrap test) and IAS 32 and SOA (Bootstrap test). Q2. Does the less conservative balance sheet classification of a Compound financial instrument (shareholder's equity) imply on "bad news" and the most conservative (liability) imply on "good news"? Answer: Strictly speaking, the balance sheet classification of a compound financial instrument as liability (as a whole) has output a result that is opposed to the expected one according to the literature. According to the valuation drivers used by analysts to estimate target prices, the high leverage of the company may have contributed to penalize more the target prices of the NEA model, whose balance sheet classification is a hundred percent a liability. Q3. How are the compound financial seen by analysts? As a liability or a shareholders' equity? Answer: The results of the experiment indicate that regardless of the accounting model used, analysts, mostly, are likely to treat the compound financial instrument conservatively as a liability.

It seems that Brazilian analysts in order to reduce risks in their judgment react in a conservative way, by considering compound financial instruments as liabilities as a whole. That behavior may also due to the complexity of the accounting treatment for these financial instruments. This evidence is pretty important for accounting regulation and for stock market regulation as market analysts are considered "gatekeepers" by the literature and their reaction can be used as a proxy for market reaction.

Thus, there are some consequences of this study that may be applied in terms of accounting regulation and for stock market regulation. First, the standards setters - CPC in Brazil and IASB internationally – must find a solution taking into consideration the cost-benefit of their decision. The accounting for compound financial instruments is very complex to comply with (and too costly), too difficult to understand and it do not contribute to improve the quality of the information disseminate in the market. The US approach, a pragmatic classification
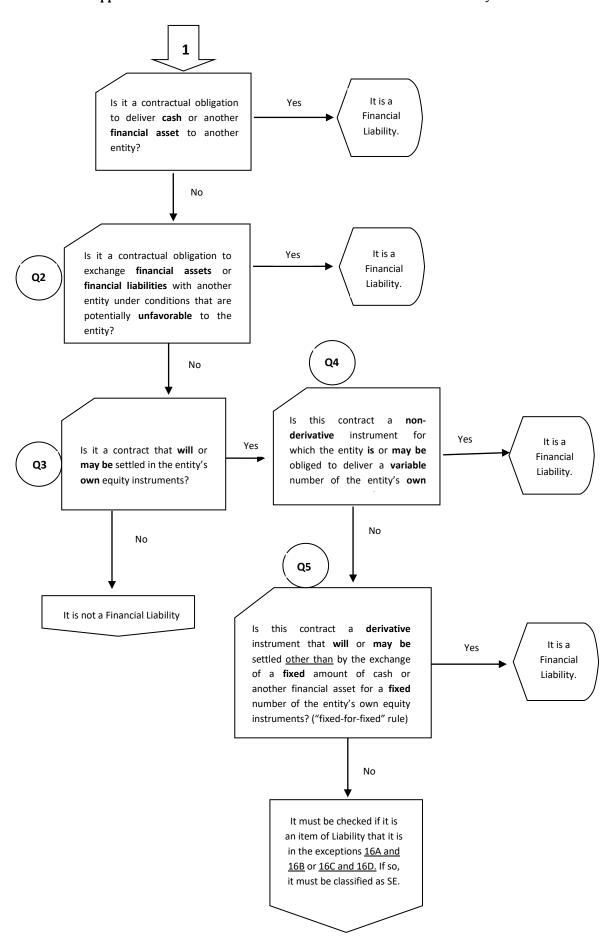
of the whole financial instrument in a category called "mezzanine" (between liabilities and shareholder's equity), may be the easiest way to solve this problem in a near term.

And second, the stock market regulator in Brazil (CVM) should require more disclosure from publicly-held companies regarding compound financial instruments to avoid misleading. A disclosure approach that deals with some attributes of the instrument, such as how it is going to be settled (in cash or in own shares of the issuing company), what covenants are linked to the instrument and what are the consequences of breaking them, what it is the effective interest cost of the instrument (if they are deferred and in which circumstances they must be paid) and so on can be another way to improve the quality of the information.

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Appendix A: Flowchart to decide whether an item is a financial liability – IAS 32

1

Is it a contractual obligation to deliver **cash** or another **financial asset** to another entity? — Yes → It is a Financial Liability.

No ↓

Q2 Is it a contractual obligation to exchange **financial assets** or **financial liabilities** with another entity under conditions that are potentially **unfavorable** to the entity? — Yes → It is a Financial Liability.

No ↓

Q3 Is it a contract that **will** or **may be** settled in the entity's **own** equity instruments? — Yes → **Q4** Is this contract a **non-derivative** instrument for which the entity **is** or **may be** obliged to deliver a **variable** number of the entity's **own** — Yes → It is a Financial Liability.

Q3 No ↓

It is not a Financial Liability

Q4 No ↓

Q5 Is this contract a **derivative** instrument that **will** or **may be** settled other than by the exchange of a **fixed** amount of cash or another financial asset for a **fixed** number of the entity's own equity instruments? ("fixed-for-fixed" rule) — Yes → It is a Financial Liability.

No ↓

It must be checked if it is an item of Liability that it is in the exceptions 16A and 16B or 16C and 16D. If so, it must be classified as SE.

Appendix B: Flowchart to decide whether an item is a component of shareholder's equity (se) – IAS 32

1

Is not it a contractual obligation to deliver **cash** or another **financial asset** to another entity?

Yes → It may be a SE item. Check Q3.

No ↓

Q2 **Is not** it a contractual obligation to exchange **financial assets** or **financial liabilities** with another entity under conditions that are potentially **unfavorable** to the issuer?

Yes → It may be a SE item. Check Q3.

No ↓

Q3 Is it a contract that **will** or **may be** settled in the entity's **own** equity instruments?

Yes →

Q4 Is this contract a **non-derivative** instrument that includes **no** contractual obligation for the issuer to deliver a **variable** number of the entity's **own** equity

Yes → It is an item of SE.

No → **Q3** No → It is not an item of SE.

Q5 No ↓

Q5 Is this contract a **derivative** instrument that **will be** settled by the issuer exchanging a **fixed** amount of **cash** or another **financial asset** for a **fixed** number of the entity's own equity instruments? ("fixed-for-fixed" rule)

Yes → It is an item of SE.

No ↓

It must be checked if it is an item of Liability that it is in the exceptions 16A and 16B or 16C and 16D. If so, it must be classified as SE.