

## Relevance of Fair Value Accounting for Financial Instruments: Some French Evidence

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### ABSTRACT

This article examines the relevance of fair value accounting on security valuation and its role regarding financial instability for a sample of French listed companies, for which the application of IAS Standard 39 is mandatory. We extend Ohlson (1995)'s model to a more general context in which different income-volatility measures as well as lagged value of stock returns and price volatility are accounted for. Our main findings confirm Ohlson (1995)'s model in that the fundamentals are relevant in explaining changes in stock prices. However, the volatility of fair value incomes does not significantly affect stock price and its volatility, and thus has no risk-relevant information for the companies considered. There is thus a need to make certain adjustments to the fair-value method of valuation, because it can amplify market panics owing to its procyclical impact on the balance sheets of listed companies.

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## I. INTRODUCTION

The recent global financial crisis 2007-2009 has highlighted some of the drawbacks of fair value. It firstly exacerbated one of the most controversial features of IAS 39, namely the procyclical effect of valuation systems on financial instruments (Laux and Leuz, 2010). Banks that had evaluated certain financial instruments on the basis of pre-crisis market prices were forced, for need of liquidity on the financial markets, to make ever-greater use of assessments based on models employing non-observable data. These models were in fact developed in a favorable economic situation, making no allowance for the deterioration of the financial markets during periods of turbulence or crisis. For this reason they do not incorporate all of the relevant risk factors, including in particular market risk, and liquidity and counterparty risk.

Second, the debate surrounding the valuation of financial instruments has led to another debate concerning the concept of reported income. Should the term be limited to the items that have hitherto comprised the net income, or would it be wiser to move towards a broader definition of income, even to an income in which all the unrealized capital gains and losses in financial instruments would be reflected? Further, from the financial accounting perspective will the adoption of fair value income provide risk-relevant information for evaluating a company's market price?

This paper contributes to the above debate by investigating the value-relevance of fair value accounting for major CAC 40 companies listed in the French stock market. We particularly examine whether the incremental volatility in fair value incomes provides risk-relevant information to the forecasting of stock prices. Indeed, unlike the net income, the fair value incomes established under IFRS7 and IAS 39 standard (i.e., comprehensive income and full fair value income) are supposed to disclose a more faithful reflection of the market's valuations of the balance-sheet's assets and liabilities by taking into consideration the unrealized capital gains and losses on the items in the accounts. Since the primary role of accounting is to provide investors with means of the pricing of listed companies' stocks, fair value accounting is justified only if the fair value incomes contain useful and relevant information regarding the price determination in the financial markets.

We also address the questions of whether mark-to-market valuation drives stock price changes (or stock returns) and stock volatility. Examination of the relationship between fair value incomes and stock returns permits to check the robustness of the results for price analysis since the majority of investors usually hold stocks over a certain period. If the fair value incomes become really more uncertain due to the volatility of profits (or losses) of financial instruments, expected returns on financial assets would increase to offer investors a fair reward for their higher level of risk-taking. On the other hand, if fair value incomes do not generate excess volatility in the financial markets, it would be unlikely that they contributed to the rise of market panics and instability as well as to the severity of the 2007-2009 global financial crisis (Plantin et al., 2008).

The sample period is intentionally set before the occurrence of the subprime and global financial crisis in order to shed light on the effects of changes in accounting method. The study is thus concerned by the French stock market reaction to the 2005 adoption of the International Financial Reporting Standards (IFRS) in Europe, and especially to IFRS 7 and IAS 39. An examination of the French case is of great interest

because French companies, unlike those in Germany, Austria, and Switzerland, were not allowed a transition period for adapting to IFRS before they were introduced in January 2005. In addition, among a number of differences between the IFRS and French standards, we note a profound divergence between these two systems in the use of the fair-value principle to the detriment of historical costs in the valuation of assets and liabilities.

Using an extended version of Ohlson (1995)'s residual-income model, we find evidence of a close link between firms' fundamental factors and stock prices. However, no significant impact of fair value accounting figures on stock prices and returns is found. Further, the variability of fair value income did not significantly drive up the return volatility, but it does accentuate the perception of risk by investors in the financial markets.

The remainder of the article is organized as follows. Section II provides a short review of accounting research literature on value relevance with regard to the fair value disclosures. Section III presents the empirical method used to examine the impact of fair value valuation on market-performance metrics. Section IV describes the data and discusses the obtained results. Section 5 concludes the article.

## II. FAIR VALUE INCOMES AND VALUE RELEVANCE

An entity must provide, under IFRS 7 and IAS 39, information enabling users of its financial statements to assess the nature and scope of the risks arising from the financial instruments to which it is exposed on the closing date. A clear answer to the value relevance of accounting amounts is thus crucial because financial reporting may affect the distribution of international investments via the interplay of various economic mechanisms (Leuz and Verrecchia, 2000; Ball, 1995; Zeff, 1978).

To date, an important number of empirical studies have examined the value-relevance of financial accounting information (Eng et al., 2009; Chambers et al., 2006; Bushman and Smith, 2001; Bae and Jeong, 2007). More interestingly, recent studies have examined the effects of various income measurements on capital asset prices and their risks. For example, Hirst and Hopkins (1998) find that a good understanding of the comprehensive income has a decisive effect on the quality of analysts' expectations, and show that the overall income improves the quality of their forecasts. Hirst et al. (2004) attempt to demonstrate, using a sample of banks, how the various ways of reporting performance affect analysts' perceptions of an entity's worth and its risks. They find that the analysts' judgments only distinguish between entities with different risks in cases where the changes in fair value are recorded in full and reported in the income statement. For their part, Biddle and Choi (2006) observe that the comprehensive income (as defined in SFAS 130) is much more pertinent than the net income.<sup>1</sup> Chambers et al. (2006) also reach the same conclusion, by studying the relevance of certain other items in the comprehensive income, following the adoption of SFAS 130. The results of the above studies are however contradicted by those of Dhaliwal et al. (1999), according to which the observed stock returns are not explained by any of the three additional items that have been added to the net income to form the comprehensive income for industrial companies. Hodder et al. (2006) examine the

volatility levels of different income measures for a sample of 202 US commercial banks, and document that the volatility of the full fair value income is representative of market-based risks and thus has value-relevance for investors.

Apart from the heterogeneity regarding empirical results, the majority of studies on banking firms have demonstrated the existence of a direct relationship between the volatility of the comprehensive income or the full fair value (FFV) income and stock prices, which is not necessarily the case for studies that have examined non-financial companies. Accordingly, the proposition that fair value accounting contributes to financial instability and crisis is not plausible. Our study builds on that of Hodder et al. (2006), which examines the impact that the accounting for financial instruments at their fair value exerts on security valuation, but we shift our focus on the market as a whole, instead of looking at the banks alone.

### III. EMPIRICAL METHOD

We employ the so-called residual-income model proposed by Ohlson (1995) to examine the impact of fair value incomes on stock prices, stock returns and stock price volatility. Our model is however more general in that various income-volatility measurements are introduced as independent variables. Insofar as the market takes past information into account in order to make price anticipations, the lagged returns and price volatility are also considered.

Formally, Ohlson (1995)'s initial model relates stock price to both current accounting data and their expected realizations. Such a model enables the consideration of expectations about the company's market performance because information pertinent to the valuation of financial assets will be incorporated into stock prices even before it is reprocessed into the forecast incomes. Its other advantage rests on the fact that it takes into account the potential impact of abnormal earnings on stock prices. Ohlson (1995) defines abnormal earnings as the additional earnings produced by operating assets in excess of the earnings expected by the market. In the absence of market frictions the residual income should tend towards zero and the market value of a share will accurately reflect its book value.

In its simplified version, the residual-income model can be expressed in the form of the following linear regression<sup>2</sup>

$$SP_{it} = \alpha_0 + \alpha_1 BVE_{it} + \alpha_2 AE_{it} + \varepsilon_t \quad (1)$$

where  $SP_{it}$ ,  $BVE_{it}$ , and  $AE_{it}$  respectively represent the stock price, the book value of equity per share, and the abnormal earnings per share of company  $i$  at the end of year  $t$ . Here,  $AE_{it}$  is used as a proxy variable representing the future abnormal earnings, which is measured by the difference between the dividend yield for the current period and the risk-free interest rate at the start of period  $t$  multiplied by the book value of equity per share at the start of period  $t$ . By construction, the future abnormal earnings reflect the compensation for taking on additional risk, while the book value of equity per share is a general indication of its fundamental value. In a perfect market the coefficient  $\alpha_1$  would be significant and equal to one, meaning that fundamental factors are fully and accurately reflected in market value of shares. But in reality it often deviates from unity

because of the effects of omitted variables such as unrecognized off-balance sheet gains and losses. The coefficient  $\alpha_2$  itself captures the impact of expected risk premium on the stock prices.

The effect on stock prices of the incremental volatility in fair value incomes beyond that of the net income can be examined by performing the following regression model<sup>3</sup>:

$$SP_{it} = \alpha_0 + \alpha_1 BVE_{it} + \alpha_2 AE_{it} + \alpha_3 (\sigma_{NIi} \times AE_{it}) + \alpha_4 [(\sigma_{CIi} - \sigma_{NIi}) \times AE_{it}] + \alpha_5 [(\sigma_{FFVli} - \sigma_{CIi}) \times AE_{it}] + \varepsilon_t \quad (2)$$

where  $\sigma_{NIi}$ ,  $\sigma_{CIi}$  and  $\sigma_{FFVli}$  denote respectively the variability (measured by the standard deviation) of the net income, of the comprehensive income, and of the FFV income, as a share of the total assets. In view of the different sizes of companies in our sample companies, this standardization reduces its effect on the results of the estimates. The model (2) thus provides an accurate investigation of the relevance of fair value valuation as compared with an accounting based on prudential rules. Indeed, by associating the volatility of the net income measure with the abnormal earnings per share, the sign and magnitude of the coefficient  $\alpha_3$  will allow us to assess the risk relevance of the net income. In the meanwhile we can interpret the significance of  $\alpha_4$  and  $\alpha_5$  coefficients as proof that the incremental volatility of the comprehensive income ( $\sigma_{CIi} - \sigma_{NIi}$ ) and that of the FFV income ( $\sigma_{FFVli} - \sigma_{CIi}$ ) constitutes an element of risk evaluated by financial market participants.

We then test the effect of the volatility of the three income measures on stock returns and price volatility using the basic idea of model (2). Specifically, stock returns and stock price volatility are introduced as dependent variables, while the list of explanatory variables is augmented by either past return or past volatility. Accordingly, models (3) and (4) can be presented as follows

$$SR_{it} = \alpha_0 + \alpha_1 BVE_{it} + \alpha_2 AE_{it} + \alpha_3 (\sigma_{NIi} \times AE_{it}) + \alpha_4 [(\sigma_{CIi} - \sigma_{NIi}) \times AE_{it}] + \alpha_5 [(\sigma_{FFVli} - \sigma_{CIi}) \times AE_{it}] + \alpha_6 SR_{it-1} + \varepsilon_t \quad (3)$$

$$SPV_{it} = \alpha_0 + \alpha_1 BVE_{it} + \alpha_2 AE_{it} + \alpha_3 (\sigma_{NIi} \times AE_{it}) + \alpha_4 [(\sigma_{CIi} - \sigma_{NIi}) \times AE_{it}] + \alpha_5 [(\sigma_{FFVli} - \sigma_{CIi}) \times AE_{it}] + \alpha_6 SR_{it-1} + \varepsilon_t \quad (4)$$

where  $SR_{it}$  and  $SPV_{it}$  represent the company  $i$ 's annualized stock returns and annualized stock price volatility at the time  $t$ . These variables are calculated from monthly stock price data. Returns are computed by taking the differences in the logarithm between two successive prices.

We estimate the abovementioned regression models by panel data estimation using the bootstrap technique which consists of making statistical inferences on the

basis of resampling distribution. Bootstrap technique is particularly suitable in cases where the assumption of normal distribution is not justified due for example to a small number of observations. In this study, we choose to perform 1500 replications of the initial sample in order to obtain robust estimates of the models' coefficients.

#### IV. DATA AND EMPIRICAL RESULTS

##### A. Data

Our study concerns companies listed in the French CAC 40 market index for which annual consolidated statements are established on December 31<sup>st</sup> of each fiscal year, under both the French Generally Accepted Accounting Principles and the IAS/IFRS system, and monthly stock market data (market prices) are available for the period from January 2005 to December 2007. Accounting data compliant with IAS 32 and IAS 39 reporting standards must be also available for three accounting years: 2005, 2006, and 2007. With respect to the above criteria, our final sample consists of 25 companies for which we could collect complete data for the three years 2005-2007, giving a total of 75 annual observations.<sup>4</sup> Note that empirical results are likely to remain unchanged if we extend to a larger sample because French firms do not have a lot of financial instruments in their balance sheets in general, which is confirmed by the slight difference between comprehensive and full fair value incomes, scaled by total assets (Table 1). For stock prices we gather the monthly data from the NYSE-Euronext database and compute the annualized log returns and annualized price volatility (or standard deviation).

The fair value data were collected from the disclosure notes accompanying the financial statements of the selected companies. We construct fair value income measurements so as to comply as closely as possible with the IASB's recommendations concerning the valuation of all financial instruments. Our measure of comprehensive income equals the net income for the accounting year plus the unrealized capital gains and losses from available for sale financial assets, those on foreign currency translations, and those on hedging instruments covered under cash-flow hedging operations. Our FFV income measure equals the comprehensive income plus unrealized fair value gains and losses on financial instruments including loans, investments, cash assets, other financial assets, cash-flow hedging instruments, securities held to maturity, fixed and variable rate liabilities, and fair value hedging instruments.

Table 1 presents the descriptive statistics for the three primary measures of incomes as a share of total assets and some variables we use in the regression models presented in Section 3. One should note in particular the heterogeneity of the size of sample companies as well as a significant difference between the comprehensive income and the net income. The volatility of the comprehensive income, partially established in fair value, is also two and a half times that of the net income. However, the volatility of the income completely established in fair value differs slightly from that of the comprehensive income. The average stock price is almost twice as high as its comparable accounting value, meaning that stock prices deviate greatly from their fundamental values. The results of the Jacque-Bera test are not in favor of normality for all considered series, thus justifying our decision to use bootstrap sampling.

**Table 1**  
Descriptive statistics for sample companies

Variables	Mean	Std. dev.	Min.	1 <sup>st</sup> Quartile	3 <sup>rd</sup> Quartile	Max.	JB
Average total assets (in € millions)	189.000	400.000	3.584	19.000	72.900	1,690.000	143.099
Net income/Total assets	0.055	0.056	-0.104	0.019	0.071	0.311	136.941
Comprehensive income/Total assets	0.070	0.128	-0.103	0.016	0.077	1.047	6146.300
Full fair value income/Total assets	0.071	0.129	-0.093	0.014	0.078	1.042	5595.258
Stock prices	67.931	40.239	4.950	41.300	84.100	220.300	45.802
Stock price volatility	19.237	19.373	3.006	8.591	20.438	106.694	238.496
$\sigma_{NI}$	0.024	0.034	0.000	0.005	0.024	0.153	163.666
$\sigma_{CI}$	0.051	0.114	0.001	0.004	0.042	0.578	1004.685
$\sigma_{FFVI}$	0.055	0.113	0.002	0.008	0.056	0.582	1069.675
Abnormal earnings per share	5.169	7.025	0.256	1.960	5.432	44.101	1032.288
Book value of equity per share	35.710	28.632	4.552	17.230	50.396	178.637	257.143

Notes: our sample consists of 25 companies of the CAC 40 market index which totalize 75 annual observations over the period 2005-2007, pooled across years.  $\sigma_{NI}$ ,  $\sigma_{CI}$ , and  $\sigma_{FFVI}$  respectively represent the volatility (measured by standard deviation) of the net income, the comprehensive income, and the full fair value income, as a proportion of total assets. Stock prices of selected companies are extracted from Euronext-NYSE database and refer to the closing and end-of-year price. The annual stock price volatility is computed by multiplying the standard deviation of monthly stock prices by  $\sqrt{12}$ . Jarque-Bera refers to the empirical statistic of the normality test for all the series, which follows a Chi-square distribution with 2 degree of freedom. Critical values at the 10%, 5%, and 1% levels are 4.605, 5.991, and 9.210 respectively.

**Table 2**  
Pairwise (lower triangle) and Spearman-rank (upper triangle) correlations

	$\sigma_{NI}$	$\sigma_{CI}$	$\sigma_{FFVI}$	AE	BVE
$\sigma_{NI}$	1.000	0.875***	0.807***	-0.203*	-0.184
$\sigma_{CI}$	0.206*	1.000	0.864***	-0.119	-0.115
$\sigma_{FFVI}$	0.158*	0.987***	1.000	-0.074	-0.086
AE	0.236**	0.037	0.037	1.000	0.672***
BVE	0.026	-0.009	-0.009	0.839***	1.000

Notes: this table reports the pairwise and Spearman-rank correlation coefficients among and between income volatility measures, abnormal earnings per share (AE), and book value of equity per share (BVE) with complete data pooled over the period 2005-2007. Spearman correlation is a measure of statistical association between two random variables that is preferably used when the distribution of the data deviates from the normal distribution. The subscripts \*, \*\*, and \*\*\* indicate that estimated coefficients are significant at the 10%, 5%, and 1% levels respectively.

Table 2 reports the results for both pairwise and Spearman-rank correlations. With reference to Spearman-rank correlations which correct for deviations of pooled

variables from normality, the volatility of all the income measures is positively correlated. Their statistical relationship is particularly strong and significant at the 1% level. There is a significant link at the 10% level between net income volatility and abnormal earnings per share, suggesting that higher risk would lower the economic and financial performance of sample companies.

## B. Empirical Results

Table 3 summarizes the results from estimating models (1)-(4) for selected companies of the CAC 40 index. Model (1) shows the link between market price of share and their fundamental accounting factors, including the book value of equity and abnormal earnings. Ohlson (1995)'s basic model seems to be valid for the French stock market, in that it explains nearly 50% of the variations in stock prices. If we take a closer look at the estimated coefficients, we find that the coefficient of the variable *BVE* is positive and highly significant at the 1% level, which confirms the theoretical prediction on the expected relationship between firms' financial and accounting figures. However, it is less than the theoretically predicted value of unity which tells us that other variables could affect the market value of shares. On the other hand, the abnormal earnings per share, which measures the compensation for taking on additional risks, does not constitute a relevant element of risk evaluated by investors, since the coefficient of the variable *AE* is not significant. Overall, these results highlight the crucial role of the book value of equity per share in determining the share's market price.

**Table 3**

Tests of the association between stock price, stock returns, price volatility, book value of equity, abnormal earnings, and income volatility measures for CAC 40 firms

	(1)	(2)	(3)	(4)
$\alpha_0$	38.051*** (0.983)	32.490*** (6.042)	0.133*** (0.052)	4.031 (2.715)
$\alpha_1$	0.572*** (0.215)	0.444* (0.235)	-0.003* (0.002)	0.141* (0.076)
$\alpha_2$	1.829 (0.983)	4.961** (2.289)	0.006 (0.015)	-0.404 (0.567)
$\alpha_3$		-34.572 (35.142)	0.004 (0.147)	9.796 (12.353)
$\alpha_4$		-9.514 (41.038)	0.108 (0.338)	-27.790 (24.852)
$\alpha_5$		9.455 (37.925)	-0.080 (0.338)	30.385 (24.504)
$\alpha_6$			-0.083 (0.124)	0.624** (0.316)
Adj.-R <sup>2</sup>	47.15%	49.29%	6.47%	58.62%

Notes: This table reports empirical results for the test of the association between, stock price, stock returns, price volatility, book value of equity, abnormal earnings per share, and income volatility measures for CAC 40 firms using regression models (1)-(4). All the regression models are estimated using the bootstrap method which corrects for the departure from normality. The bootstrap standard errors of the estimated coefficients are given in parentheses. \*, \*\* and \*\*\* indicate that the coefficients are significant at the 10%, 5%, and 1% thresholds respectively.



In comparison with model (1), model (2) has three coefficients more. The introduction of  $\alpha_3$ ,  $\alpha_4$  and  $\alpha_5$  is intended to capture the impact of the abnormal earnings per share adjusted respectively for the volatility of net income and the incremental volatility of the fair value income measures beyond that of the net income. The results obtained first indicate that stock price is always an increasing linear function of the book value of equity per share. However, the coefficient associated with this explanatory variable is now only significant at the 10% level, and has smaller value compared to model (1). Second, the coefficient of abnormal earnings becomes significant at the 1% level. This result is economically very interesting, in that taking into account the volatility of the net income measure strengthens the market's perception of risk. As expected, higher risk premium implies higher stock price. Finally, the effect of the three additional variables is insignificant. These findings thus suggest that the volatility of the net income as well as the incremental volatility of fair value income measures is irrelevant to the pricing of stocks within the residual-income valuation model. This absence of impacts, coupled with the strengthening of the role of abnormal earnings variable in the prediction of stock price under model (2), might lead one to think that on average the market operators are paying more attention to expected abnormal earnings in the formation of the market price only after income volatility is accounted for, and not following the adoption of the IAS/IFRS standards. The fact that the volatile nature of full fair value incomes does not constitute a risk-relevant factor for French firms seems to corroborate the results of Dhaliwal et al. (1999), who, using a sample of US industrial firms, did not find significant links between the observed stock returns/market value and the three additional (fair value) items that have been added to net income.<sup>5</sup> Obviously, the above results lead us to conclude that incremental volatility inherent in fair value incomes does not cause the changes in stock prices.

Turning out to model (3) where stock returns are related to six explanatory variables including those of the Ohlson (1995)'s traditional residual-income valuation model, we find that the model is largely insignificant. Stock returns are only weakly driven by the changes in book value of equity per share whose associated coefficient is significant at the 10% level. This result thus reinforces our findings from the price-based valuation model in the sense that fair value incomes are not much value-relevant as expected by accounting regulators. It is also consistent with the findings of previous papers, based for example on EVA approach, that residual income has only a minimally incremental association with stock returns, relative to earnings (Biddle et al., 1997; Chen and Dodd, 1997).

As we have noted previously in Section II, the fair value valuation method implemented via the IAS/IFRS accounting standards has been the subject of many critical comments. One may expect them to be a source of additional market volatility arising from the increased volatility of reported accounting figures following the application of fair value. To underline the role of fair value accounting in market instability and by extension in the current global financial crisis, we now estimate model (4) pooled over the 2005-2007 using the annualized volatility of stock prices as the dependent variable.

Similar to the results of the return-based model, we note that the book value of equity per share significantly affects stock price volatility at the 10% level. Past price

volatility has a significant predictive power for future price volatility. Our evidence does not support the view that the incremental volatility of full fair value incomes drives up the annualized volatility of stock prices. Therefore, it seems difficult to conclude that the new accounting standards would have been capable of amplifying the market volatility before the crisis. Nevertheless, our findings do raise questions about the relevance of the new accounting system in that incomes established under fair value have an insignificant explanatory power with respect to the formation of stock prices and returns.

## V. CONCLUSION

Following the failure of the US subprime mortgage markets in the summer of 2007, a number of criticisms have been addressed to the fair value principle in reference to IAS 39 and IFRS 7 standards, which define the method of accounting and valuation for financial instruments. The main reason is that the application of this valuation has procyclical effects on the economy, and also on the financial and banking sectors, in that it amplifies asset price bubbles in bullish markets, and accentuates panics when markets fall. At the same time, the date for the mandatory adoption of the new standards by listed companies in Europe has coincided with the appearance of a period of increased financial instability, the one we see today. Whether fair value accounting faithfully captures stock price risk is an issue of great interest.

Putting everything in perspective, we conducted an investigation of the pertinence of fair value accounting and its role with regard to financial instability. Based on market and accounting data for 25 companies included in the CAC 40 market index, our empirical results confirm Ohlson (1995) model in that the fundamentals are shown to be relevant in the explanation of changes in stock price. Moreover, the volatility of fair value incomes does not significantly affect the determination of stock price, but only increases the risk perception from market operators. When we test the impact of the variability of fair value incomes on stock returns and stock price volatility, no significant effect of fair value incomes is found.

The fact that the fair value method is not directly related to the financial crisis does not mean that it can escape a few necessary adjustments. If we accept that the end purpose of financial accounting is to inform market operators about the performance of the company concerned, the absence of a significant impact from the fair value measurement of income on the valuation of financial assets certainly raises questions about the pertinence of using the proposed accounting method. All in all, its role as an aid in making investment decisions is not proven. Moreover, mark-to-market valuation may be considered to be the best method in an informationally efficient market, because share price corresponds well to their capacity for generating earnings. Inversely, in a crisis period leading to a system-wide fall in the value of financial asset portfolios, the market price no longer provides an exact measure of value because the market is subject to malfunctions in such situations.

## ENDNOTES

1. Standard SFAS 130 (Reporting of Comprehensive Income), announced by the FASB in June 1997 and taking effect for the accounting years following December

- 15, 1997, established certain standards for the reporting and presentation of comprehensive income.
2. See Ohlson (1995); Barth et al. (2001), and Hodder et al. (2006) for more details regarding the model's properties.
  3. Note that the addition of the incremental volatility measures into model (2) does not change the underlying assumption of Ohlson (1995) model that stock prices reflect not only the information content of earnings and book values, but also all other information being released to the investors (e.g., volatility measures).
  4. Fifteen companies of the CAC 40 index were excluded, either because their accounts were established on March 31 or June 30 (e.g., Accor, Air France – KLM, and Alstom), or for a shortage of financial and accounting data owing to their recent admission into the CAC 40 index (e.g., EDF and GDF-Suez), or for a lack of detailed data in their annual financial statements.
  5. Under SFAS 130, these items include change in the balance of unrealized gains and losses on marketable securities, the change in the cumulative foreign currency translation adjustment, and the change in additional minimum pension liability in excess of unrecognized prior service costs.

#### REFERENCES

- Bae, K-H., and S.W. Jeong, 2007, "The Value-relevance of Earnings and Book Value, Ownership Structure, and Business Group Affiliation: Evidence from Korean Business Groups," *Journal of Business Finance and Accounting*, 34, 740-766.
- Ball, R., 1995, "Making Accounting More International: Why, How, and How Far Will It Go?" *Journal of Applied Corporate Finance*, 8, 19-29.
- Barth, M., W. Beaver, and W. Landsman, 2001, "The Relevance of the Value Relevance Literature for Financial Accounting Standard Setting: Another View," *Journal of Accounting and Economics*, 31, 77-104.
- Biddle, G., and J.H. Choi, 2006, "Is Comprehensive Income Useful?" *Journal of Contemporary Accounting and Economics*, 2, 1-32.
- Biddle, G., R. Bowen, and J. Wallace, 1997, "Does EVA Beat Earnings? Evidence on the Associations with Stock Returns and Firms Values," *Journal of Accounting and Economics*, 24, 301-306.
- Bushman, R.M., and A.J. Smith, 2001, "Financial Accounting Information and Corporate Governance," *Journal of Accounting and Economics*, 32, 237-333.
- Chambers, D., T.J. Linsmeier, C. Shakespeare, and T. Sougiannis, 2006, "An Evaluation of SFAS No. 130 Comprehensive Income Disclosures," *Review of Accounting Studies*, 12, 557-593.
- Chen, S., and J. Dodd, 1997, "Economic Value Added (EVA<sub>tm</sub>): An Empirical Examination of A New Corporate Performance Measure," *Journal of Management*, 9, 319-333.
- Dhaliwal, D., K. Subramnyam, and R. Trezevant, 1999, "Is Comprehensive Income Superior to Net Income as A Measure of Firm Performance?" *Journal of Accounting and Economics*, 26, 43-67.

- Eng, L.L., S. Saudagaran, and S. Yoon, 2009, "A Note on Value Relevance of Mark-to-market Values of Energy Contracts under EITF Issue No. 98-10," *Journal of Accounting and Public Policy*, 28, 251-261.
- Hirst, D.E., and P.E. Hopkins, 1998, "Comprehensive Income Reporting and Analysts' Valuation Judgments," *Journal of Accounting Research* 36 (Supplement), 47-75.
- Hirst, D.E., P.E. Hopkins, and J. Wahlen, 2004, "Fair Values, Performance Reporting, and Bank Analysts' Risk and Valuation Judgments," *Accounting Review*, 79, 455-474.
- Hodder, L., P.E. Hopkins, and J. Wahlen, 2006, "Risk-relevance of Fair Value Income Measurement for Commercial Banks," *Accounting Review*, 81, 337-376.
- Laux, C., and C. Leuz, 2010, "Did Fair-value Accounting Contribute to the Financial Crisis?" *Journal of Economic Perspectives*, 24, 93-118.
- Leuz, C., and R.E. Verrecchia, 2000, "The Economic Consequences of Increased Disclosure," *Journal of Accounting Research* 38 (Supplement), 91-124.
- Ohlson, J.A., 1995, "Earnings, Book Values and Dividends in Equity Valuation," *Contemporary Accounting Research*, 11, 661-687.
- Plantin, G., H. Saprà, and H.S. Shin, 2008, "Fair Value Accounting and Financial Stability," *Financial Stability Review* 12, Bank of France.
- Zeff, S.A., 1978, "The Rise of Economic Consequences," *Journal of Accountancy*, 146, 56-63.

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