International Journal of Economics and Financial Issues
Vol. 4, No. 1, 2014, pp.196-216
ISSN: 2146-4138
www.econjournals.com

Stock Prices and Implied Abnormal Earnings Growth

Hafiz Imtiaz AHMAD
NYIT, Abu Dhabi, UAE.
Email: hahmad02@nyit.edu

Pascal ALPHONSE
University of Lille North of France, F-59000,
Lille, France-LSMRC. Email: palphonse@univ-lille2.fr

Michel LEVASSEUR
University of Lille North of France, F-59000,
Lille, France-LSMRC. Email: michel.gabriel.levasseur@gmail.com

ABSTRACT: In terms of corporate valuation, the frequently used heuristics are Price Earnings or Price Earnings to Growth ratios. The development of a valuation model of type Abnormal Earnings Growth Model including modeling of expected rents evolution, conditions compatible with perfect competition, allows us to propose a testable relationship between market value of share, expected earnings per share in a year, its rate of growth in short term and a set of accounting variables composing a synthetic indicator of growth of company. Our results show that (1) expected increase in earnings per share are significantly associated with stock prices for developed countries, (2) but, the persistence of its effects is limited for emerging countries, (3) when the dynamics of growth are more complex, inclusion of synthetic variable of can make a significant correction term (4) and the implied cost of capital is significantly higher for emerging countries than for developed countries.

Keywords: equity valuation; abnormal earnings; Emerging markets
JEL Classifications: G12; G14; M41

1. Introduction

Our study examines the relationship between the market price of a share, expected earnings and its expected growth for the next two years because they are the very value drivers, followed by the financial community through the P/E ratio and PEG ratio, for example. Consistent with the current accounting literature called, the association. We take the proposal put forward by Barth et al. (2001): "an accounting amount is defined as value relevant if it has a predicted association with equity market values" (p.79) and their following remark; "accounting information can be value relevant but not decision relevant if it is superseded by more timely information". We make no assumption regarding the efficiency of stock markets. Our study fits in the course of all those interested to price levels and not their changes. We raise this by a double question: knowing that the form of association between stock price and expected earnings per share depends on the type of growth of the company, (i) that brings short term increase in expected earnings by financial analysts to explain differences in stock market value (ii) can an indicator of growth built on historical accounting data correct the bias introduced by previous measure?

The interest in this subject is primarily motivated by practical considerations. Investments in the international equity markets have become significant for fund managers worldwide. The use of methods based on comparison of basic observed ratios, for listed companies, between stock prices and expected earnings per share is often considered the most powerful, (Liu et al, 2007) reports that "EPS forecasts represented substantially better summary measures of value than did OCF forecasts in all five countries examined, and this relative superiority was observed in most industries". Understanding the link between market value and expected earnings is likely to illuminate the investment process in countries where information is more difficult to collect for foreign investors.

The second motivation is of theoretical nature. It focuses on the relationship between book values and market values. The valuation models based on abnormal earnings growth (A.E.G.) provide support to the link between expected future earnings, expected dividends and market values. The pioneering model of Ohlson and Juettner-Nauroth (2005) claim that only the expected earnings for the next two years and expected dividend are sufficient. The empirical evidence is not conducive to this hypothesis (Gode and Mohanram, 2003), (Penman, 2005). The question is whether an extension of the model A.E.G.(Abnormal Earnings Growth) proposing a more fine decomposition of the abnormal earnings growth in volume and intensity provides a better estimate of the link between expected earnings and stock price of a share.

We begin our study with a theoretical extension of the model A.E.G. Aware of the fact that the models of type AEG are complex in their inner mechanics (Brief, 2007), we want to make development of the profitability in the form of a progressive realization of a set of growth opportunities. To do this, we take an idea developed by Walker and Wang (2003) in a different context, that of R.I.M. (Residual Income Models). As Walker and Wang, we bring together the microeconomic analysis and modeling of accounting earnings. But we do so as a part of valuation based on taking into account expected earnings and especially their growth.

The second part of the study is empirical. Three samples are formed over the period 1998-2008.They include American companies, firms from other developed countries (Germany, Australia, Canada, France, Japan, and the United Kingdom) and a set from emerging countries (China, Korea, Hong Kong, India, Malaysia, Singapore, Taiwan and Thailand). Our objective is to provide an international comparison. From historical accounting data, we build a synthetic indicator of growth by company. We, then, proceed to estimate our model by incorporating the variables of expected earnings (in level and in variation), this synthetic variable of growth and other control variables. The objective is to verify (1) that the anticipated effects of abnormal earnings growth are limited in time, (2) that the inclusion of the synthetic variable for growth makes a significant correction when the variable of growth in the short-term alone is insufficient,(3) that the values implicit of cost of capital are acceptable from an economic stand point.

Our empirical study allows to establish the following results:

(i) Whatever the geographical zone, expected earnings per share remains the variable most strongly associated with the stock market values. But, the coefficients are higher in developed countries than in emerging countries. The valuation of profits is affected by different levels of their persistence and more generally of risk.

The expected change in earning per share is significantly associated with the market value of a share (especially for developed countries) but its persistence is limited (especially in emerging countries). This last result contrary to the intuition which would like the expected growth being greater in emerging countries, the PEG is a better tool of valuation in these countries. The PER and PEG ratio combine in valuation essentially, within developed countries.

(ii) These two indicators must be supplemented to avoid either over-valuation or under-valuation. Taking into account the intensity of the growth through historical accounting indicators provides a part of the missing information. The corrections are mostly positive (insufficient to take into account the growth potential by the increase of expected earnings, especially in emerging countries) and more rarely negative (low persistence of the intensity of the expected pension, rather in part of developed countries).

(iii) At the international level, the expected implied rates of return are significantly higher in emerging countries than in developed countries.

The rest of the paper is organized as follows. In Section 2, we develop our model; Section 3 presents our data and some descriptive statistics. Section 4 describes the methods of calculation of the variable of growth. Our results are presented in Section 5 and Section 6 concludes.

2. The Model

2.1 The sources of model:

We take an idea developed by Walker and Wang (2003) in a different framework. Walker and Wang approach to microeconomic analysis and modeling of company's accounting earnings particularly the R.I.M. (Residual Income Model). They studied several forms of competition and provide, among other, a representation of the dynamic followed by the residual income in a world of perfect competition. We

propose a similar extension but applied to the model AEG (Abnormal Earning Growth) proposed by Ohlson and Juettner-Neuroth (2005).

We preferred to place our study in the current A.E.G. model because its point of departure is linked to an empirical observation. The accounting variable best associated with market value is expected earnings (Ohlson & Gao, 2006). Unlike the R.I.M. model that bases valuation on the book value of equity, the A.E.G. model anchor valuation in the capitalization of expected earnings (Ohlson J.A., 2005). The progress in the modeling requires a description of the dynamics of this earnings. Ohlson and Juettner Neuroth postulate that the annual variation in the expected abnormal earnings (income in excess of the remuneration of reinvested cost of capital) follows an autoregressive process of order 1. Not only, no theoretical justification is advanced to support this hypothesis, but this is certainly very restrictive, as it gives only expected incomes very close role in valuation.

The purpose of this article is to extend the analysis of Walker and Wang to the model of Ohlson and Juettner Neuroth in the framework of a pure and perfect competition and unbiased accounting. The originality of this paper is inspired by a measure of growth, already used in accounting literature by Hribar and Yehuda (Hribar & Yehuda, 2008). Thus indirectly taking into account the expected rents, we, partly, believe to avoid some of the shortcomings highlighted by Holthausen and Watts (Holthausen and Watts, 2001).

2.2 The valuation model from abnormal earnings growth and growth opportunities

First we assume that the price of a share P_0 is equal to the sum of free cash flow received by shareholders $E_0\left[\widetilde{FPS}_t\right]$ discounted at a required rate:

$$\mathrm{P}_0 = \sum_{t=1}^{\infty} \frac{\mathrm{E}_0\left[\widetilde{\mathrm{FPS}}_t\right]}{(1+r)^t} \quad (1)$$

A second hypothesis, the variation in earnings has two sources: the variation in the value of a rent and reinvestment of undistributed profits. The complementary hypothesis of the reinvestment of the latter at the rate r guarantees the neutrality of the dividend policy. By designating, intensity of expected rent by a_t and q_t its extent, we put:

$$\mathrm{EPS}_{t+1} - \mathrm{EPS}_t = a_{t+1} \cdot q_{t+1} - a_t \cdot q_t + (\mathrm{EPS}_t - \mathrm{FPS}_t) \cdot r \quad (2)$$

This particular set of assumptions used to express the price of share based on the expected income, the required rate of return and expected values of the parameters defining the future rent:

$$\mathbf{P_0} = \frac{\mathbf{E_0}\left[\widetilde{\mathbf{EPS}}_\mathbf{1}\right]}{\mathbf{r}} + \frac{\mathbf{1}}{\mathbf{r}} \cdot \sum_{\mathbf{t=1}}^{\infty} \frac{(\mathbf{E_0}[\tilde{a}_{t+1} \cdot \tilde{q}_{t+1}] - \mathbf{E_0}[\tilde{a}_t \cdot \tilde{q}_t])}{(\mathbf{1+r})^t} \quad (3)$$

To complete the model, we adopt a third hypothesis that the variables a_t and q_t follow linear informational dynamics described in (4). The intensity of the rent $\tilde{a}_{t+1}$ is decomposed into a part depending on its past value $\delta \cdot a_t$ and a white noise $\tilde{\varepsilon}_{1,t+1}$.

Its persistence is measured by the parameter δ (with the condition $0 < \delta < 1$ to take into account the effects of competition). The extent of the rent $\tilde{q}_{t+1}$ is a function of its trajectory $\bar{q}_{t+1}$ and a gap which itself decomposes into a corrective movement back toward the track $\gamma \cdot (1 + c) \cdot (q_t - \bar{q}_t)$ and a white noise $\tilde{\varepsilon}_{2,t+1}$. The coefficient γ measures the intensity of the restoring force to the track $\bar{q}_t$. The trajectory $\bar{q}_t$ of the extent of the rent grows at a rate c to take account of the growth. Finally, the two white noises embedded in these movements are assumed to be independent: there is no link between variations of intensity and variations of the extent of the rent.

$$\begin{gathered}
\tilde{\mathbf{a}}_{\mathbf{t+1}} = \boldsymbol{\delta} \cdot \mathbf{a_t} + \tilde{\boldsymbol{\varepsilon}}_{\mathbf{1,t+1}} \\
\tilde{\mathbf{q}}_{\mathbf{t+1}} - \bar{\mathbf{q}}_{\mathbf{t+1}} = \boldsymbol{\gamma} \cdot (\mathbf{1} + \mathbf{c}) \cdot (\mathbf{q_t} - \bar{\mathbf{q}}_\mathbf{t}) + \tilde{\boldsymbol{\varepsilon}}_{\mathbf{2,t+1}} \quad (4) \\
\bar{\mathbf{q}}_{\mathbf{t+1}} = \bar{\mathbf{q}}_\mathbf{t} \cdot (\mathbf{1} + \mathbf{c}) \\
\mathbf{cov}\left(\tilde{\boldsymbol{\varepsilon}}_{\mathbf{1,t+s_1}}, \tilde{\boldsymbol{\varepsilon}}_{\mathbf{2,t+s_2}}\right) = \mathbf{0} \quad \forall \mathbf{s_1}, \mathbf{s_2}
\end{gathered}$$

This set of assumptions allows to write the following relationship (Proof available)

$$\mathbf{P_0} = \left\{\mathbf{E_0}\left[\widetilde{\mathbf{CEPS}}_\mathbf{2}\right] - (\mathbf{1} + \mathbf{g}) \cdot \mathbf{E_0}\left[\widetilde{\mathbf{EPS}}_\mathbf{1}\right]\right\} \cdot \frac{\mathbf{1}}{\mathbf{r}} \cdot \frac{\mathbf{1}}{\mathbf{r-g}} + \bar{\mathbf{q}}_\mathbf{1} \cdot \mathbf{E_0}[\tilde{\mathbf{a}}_\mathbf{1}] \cdot \frac{\mathbf{1}}{\mathbf{r}} \cdot \frac{\mathbf{h}}{\mathbf{r-g}} \quad (5)$$

with :

$$\begin{gathered}
\mathrm{g} = (1 + \mathrm{c}) \cdot \delta \cdot \gamma - 1 \\
h = (1 + \mathrm{c}) \cdot \delta \cdot (1 - \gamma) \cdot [\delta \cdot (1 + \mathrm{c}) - 1] \\
\widetilde{\mathrm{CEPS}}_2 = \widetilde{\mathrm{EPS}}_2 + \mathrm{r} \cdot \widetilde{\mathrm{FPS}}_1
\end{gathered}$$

The primary interest of this model is to retain the general form of popular valuation models, taking as anchoring the expected earnings per share. For example, if $\delta = \gamma = 1$, it reduces to the model of Ohlson Juettner-Nauroth which is only a special case. Assuming again that $E_0\left[\widetilde{EPS}_2\right] = (1 + c) \cdot E_0\left[\widetilde{EPS}_1\right]$, we find the standard model of Gordon and Shapiro.

The second interest of this model is mainly to clarify the value of the coefficient included in the autoregressive dynamics of abnormal earnings growth. It is not solely equal to the expected rate of growth in the long run, as in Ohlson and Juettner-Nauroth. It takes into account the value creation potential of the firm, the speed with which the latter will be realized (γ) and its ability to persist (δ).

The third interest is to show that under what conditions a valuation based only on expected earnings $\widetilde{EPS}_1$ and $\widetilde{EPS}_2$ may suffice. It is necessary that the term h is near to zero or that $\delta \cdot (1 + c) = 1$. Conversely, when the ability to generate value is not persistent ($\delta < (1 + c)^{-1}$), a model of type AEG overestimates the share. When the enterprise is only at the beginning of growth ($\bar{q}_1$high), its implementation very progressive (γ low) and its ability to create value very persistent ($\delta > (1 + c)^{-1}$), then a model of type AEG is very incomplete. Its explanatory power is weak and suffers from the absence of key variables.

2.3 The specification of the model tested

From an empirical point of view, the measures selected for $E_0\left[\widetilde{EPS}_1\right]$ and $E_0\left[\widetilde{EPS}_2\right]$ are the median forecasts of earnings per share retained by IBES, noted EPS_1 and EPS_2.The measure chosen for $E_0[\tilde{F}_1]$ is the median forecast adopted by IBES for dividend per share, noted DPS_1.We do not have any direct forecast for $\bar{q}_1 \cdot E_0[\tilde{a}_1]$. The objective of this study is to test the explanatory power of several approximations:

$$\bar{\mathbf{q}}_{\mathbf{1}} \cdot \mathbf{E_0}[\tilde{\mathbf{a}}_{\mathbf{1}}] = \sum_{\mathbf{k=1}}^{\mathbf{k=N}} \boldsymbol{\alpha}_{\mathbf{k}} \cdot \mathbf{Y_k} \cdot \mathbf{TAPS_0} \quad (6)$$

Where k is one of the N variables potentially correlated with the expected abnormal earnings growth, Y_k knowing that α_k is a measure of its expected impact on the evolution of the earnings and $TAPS_0$ total assets per share. P_0 is the share price in the beginning of the year. The variables P_0, EPS_1, EPS_2 and DPS_1 were divided by $TAPS_0$, to be normalized. Finally, the model was completed by the inclusion of a control variable for size measured by log of market capitalization in U.S. dollars. The following specification was chosen

$$\frac{\mathbf{P_0}}{\mathbf{TAPS_0}} = \boldsymbol{\beta}_{\mathbf{0}} + \boldsymbol{\beta}_{\mathbf{1}} \cdot \frac{\mathbf{EPS_1}}{\mathbf{TAPS_0}} + \boldsymbol{\beta}_{\mathbf{2}} \cdot \frac{\mathbf{EPS_2 - EPS_1 + r \cdot DPS_1}}{\mathbf{TAPS_0}} + \sum_{\mathbf{k=1}}^{\mathbf{k=N}} \boldsymbol{\beta}_{\mathbf{k+2}} \cdot \mathbf{Y_k} + \boldsymbol{\beta}_{\mathbf{N+3}} \cdot \mathbf{ln(CB_0)} + \tilde{\boldsymbol{\epsilon}} \quad (7)$$

One of the main limits of this specification is that it only takes the average values for r and g with in each country. Note that according to the theoratical model we should have

$$r = \sqrt{\left(\frac{\beta_1}{2 \cdot \beta_2}\right)^2 + \frac{1}{\beta_2}} - \frac{\beta_1}{2 \cdot \beta_2} \text{ and } g = -\frac{\beta_1}{\beta_2}.$$

3. Data and Descriptive Statistics

3.1 Constitution of the samples

Our sample was compiled from the information available in early July 2009 in the data base Thomson Financial Accounting Research data and covering 18 countries for which the number of firms represented in this database was the highest, it is possible some information has been modified ex post by data provider. It contains both the developed countries (Germany, Australia, Canada, France, Italy, Japan, United Kingdom, Sweden and USA) and emerging countries (Brazil, China, Korea, Hong Kong, India, Malaysia, Singapore, Taiwan, and Thailand). South Africa and India were eliminated from sample due to too few and limited forecast data. In order to study the period 2001-2008 between the two crises, it was necessary to collect the data over the period 1998-2008. In effect some variables appear in the form of annual variations, other as average of past performance. Missing information, especially for forecast of earning per share, reduced the sample size.

In order to constitute homogenous sample with in each of the country as regards of accounting year, we selected only the companies with year-end corresponding to the date most widely used in the country. Generally, it is the 31 December, with the exception of Australia (end of June) and Japan (end of March). This requirement generally seems not very constraining.

International Journal of Economics and Financial Issues
Vol. 4, No. 1, 2014, pp.196-216
ISSN: 2146-4138
www.econjournals.com

Table 1. Selection of Sample

This table presents the modalities of selection of companies studied. The period of selection extends from 1998 to 2008.The data comes from Worldscope and IBES databases provided by Thomson Financial. The securities initially selected for all concerned countries are those considered by Thomson Financial as active or inactive, in order to limit the "survivorship" bias. Numbers of these securities correspond to firms effectively disappeared, to not listed companies or yet to particular categories of securities issued. The selection process consisted of a search of market values year after year of these companies and to retain only the firms years for which this information was available. In order to have uniform accounting periods by country, we have selected only those companies that adopted the most usual year end date for each country. By following the sector classification proposed by Fama and French (49), we have eliminated all societies of financial sectors and real estate (45-49) and the companies from which the sector was not identified. The following selection consisted of to retain only the firms for which accounting data and earnings per share forecast, necessary for the study was available

	Active and inactive in the database Thomson Financial	Number of firms whose fiscal year end date is known	The most frequent end of year for the country	Number of firms having this year end date	Percentage of firms with this year end date	Number of firms with a code FF sector less than 45	Number of companies with market capitalizations available at least for one year	Number of firms / year with known market capitalizations b etween 1998 and 2008	Number of firms / year with the known book values used between 1998 and 2008	Number of firms/ year with equity &capitalizatio n in excess of 1 million $ between 1998 &2008	Number of firms / year with positive net income betweer 1998 and 2008	Number of firms / year with positive net income between 2001 and 2008	Number of firms/ year with EPS forecasts available between 2001 and 2008
USA	28 013	8 574	December	6 086	70.98%	4 531	4 217	32190	30 888	25 127	15 910	12 078	5 940
Germany	29 096	7 075	December	6 739	95,3%	6 066	546	4 624	2 457	2 386	1 807	1 424	705
Australia	17 369	2 733	June	1 975	72,3%	1 660	1 376	8 163	6 668	5 831	2 613	2 287	851
Canada	20 176	5 665	December	5 076	89,6%	4 282	937	6 342	3 962	3 790	2 168	1 778	840
France	27 856	5 750	December	4 781	83,1%	4 131	470	4 099	2 534	2 417	1 924	1 603	812
Italy	13 825	1 705	December	1 640	96,2%	1 422	210	1 648	1 287	1 280	967	762	356
Japan	36 774	5 604	March	2 969	53,0%	2 652	2 564	24 453	10 979	10 876	9 176	8 167	3 818
United Kindom	38 141	7 201	December	3 976	55,2%	3 454	702	4 869	4 771	4 316	2 650	2 107	985
Sweden	11 050	1 772	December	1 633	92,2%	1 441	309	2 276	1 054	1 048	776	599	409
Other developed countries	*194 287*	*37 505*		*28 789*		*25 108*	*7 114*	*56 474*	*33 712*	*31 944*	*22 081*	*18 727*	*8 776*
Brazil	21 722	7 335	December	7 318	99,8%	6 615	250	1 957	1 008	974	787	647	252
China	23 521	4 437	December	4 381	98,7%	4 081	1 768	10 682	2 493	2 421	2 047	1 672	381
Korea	1 804	1 091	December	998	91,5%	956	948	7 691	5 603	5 482	4 235	3 570	376
Hong Kong	7 155	1 240	December	805	64,9%	624	469	3 787	3 565	3 390	2 378	2 020	675
Indonesia	888	716	December	716	100,0%	570	274	2 228	2 049	1 781	1 362	1 139	232
Malaysia	1 938	1 450	December	918	63,3%	794	510	3 859	3 188	3 073	2 338	1 962	519
Singapore	6 053	1 610	December	1 146	71,2%	1 014	354	2 564	2 128	2 066	1 581	1 319	340
Taiwan	3 754	1 894	December	1 891	99,8%	1 795	1 418	9 725	4 605	4 589	3 630	3 071	628
Thailand	1 084	800	December	755	94,4%	641	413	3 191	2 618	2 444	1 944	1 606	424
Emerging countries	*67 919*	*20 573*		*18 928*		*17 090*	*6 404*	*45 684*	*27 257*	*26 220*	*20 302*	*17 006*	*3 827*

The percentage of companies respecting this practice is most often above 90%.However, there are two major exceptions among the developed countries (Japan and United Kingdom, where the percentage is around 50%). Similarly, Hong Kong and Malaysia have smaller proportions (about 60%). The financial and real estate companies whose accounting standards are often specific and not comparable were eliminated. We could raise within the Thomson Financial database only the market capitalization for
7 114 companies of the other developed countries and 6 404 companies of emerging countries, for a total firms-year respectively equal to 56 474 and 45 684. Companies are not, therefore, present for all years. If we compare these figures to theoretical value of firms-year with a continuous presence over 11 years, we obtain a frequency of occurrence of 72% for other developed countries and 65% for emerging countries. This last sample is, therefore, somewhat less dense.

The availability of accounting data required to estimate the variables used in the study further reduced the sample size. The loss of the number of observation is equivalent for the two sub populations (other developed countries and emerging countries), or about 40%. For the rest of the study, we selected only profitable companies. They are more numerous in emerging countries (77%) than among other developed countries (69%). Finally, the greatest loss of observation comes from the limited number of forecasts for earning per share available on IBES during this period. The coverage rate is 47% for other developed countries and only 23% for the emerging countries. In total, we have
12 603 firm years distributed for 8 776 to other developed countries and 3 827 for emerging countries. The number of observation is increasing over the period: 802 in 2001 and 1809 in 2008 but relatively stable from 2004 to 2008.The maximum is 2175 in 2007, just before the last financial crisis.

3.2 Descriptive statistics

The average stock market values normalized by total assets (measured by the item WS.YrEndMarketCap divided by the item WS.TotalAssets of Worldscope database from Thomson Reuters) are substantially similar for emerging countries (1.09) and other developed countries (1.10).The medians are lower because of the asymmetry of the distributions associated with positive sign of this measure. With in groups, the averages are significantly different: the highest for Australia (1.47) and Indonesia (1.36) and the lowest for Italy and Japan (0.84) and Korea (0.77).The mean and median are higher in the case of USA (1.55 and 1.13 respectively), reflecting a higher capitalization and /or greater indebtedness over this period.

The return (measured by the item IBH.EPSMedianFYR1 divided by (WS.TotalAssets/ WS.Common Shares Outstanding) of the databases Worldscope and IBES from Thomson Reuters) appear higher for the emerging countries (0.103) and USA (0.01) than for other developed countries (0.075) if we consider expected earnings per share normalized by total assets per share. Brazil emerges as the best performing country (0.14) and Japan as the least (0.04).The ratio of the expected change in earnings per share normalized by total assets per share (measured by the difference of IBH.EPSMedianFYR2 and IBH.EPSMedianFYR1, divided by (WS.TotalAssets/ WS.CommonSharesOutstanding) of the databases Worldscope and IBES from Thomson Reuters) reinforces this impression. It is higher for the USA (0.018) and emerging (0.014) than for other developed countries (0.10), Brazil and Japan still occupying the same places.

The sample firms belonging to other developed countries are sized (measured by the logarithm of market capitalization in USD: WS.YrEndMarketCapUSD of Worldscope database from Thomson Reuters) a little larger than those of emerging countries, but smaller than the American ones. The companies are significantly smaller for Malaysia, Thailand and Singapore.

Table 2. Descriptive Statistics

This table presents the synthesis of the values taken in the sample by the 3 basic selected variable used in the chosen model, i.e. market capitalization at year end, expected earnings per share for the coming year and expected earnings growth for the following year .All these variables are normalized by total assets for the first, by total assets divided by number of shares for the following two. The table also presents a measure of the size of companies selected through the natural logarithm of the market capitalization. The sample contains for all the countries only the companies whose year end is 31 December (30 June for Australia and 31 March for Japan). The study period extends from 2001-2008.The data come from Worldscope and IBES databases provided by Thomson Financial

Panel A :

	Market capitalization / Total assets			Expected EPS / Total Assets per share			Eaxpected EPS Variation / Total Assets per sahre		
	Mean	Median	S.D	Mean	Median	S.D	Mean	Median	S.D
USA	*1.55*	*1.13*	*1.37*	*0.10*	*0.08*	*0.09*	*0.018*	*0.012*	*0.026*
Germany	1,11	0,72	1,19	0,07	0,06	0,06	0,012	0,008	0,015
Australia	1,47	1,06	1,36	0,11	0,08	0,10	0,017	0,010	0,036
Canada	1,11	0,90	0,80	0,08	0,06	0,06	0,009	0,005	0,027
France	0,99	0,70	0,93	0,07	0,05	0,04	0,009	0,007	0,012
Italy	0,84	0,67	0,66	0,05	0,05	0,03	0,007	0,006	0,008
Japan	0,84	0,64	0,68	0,04	0,04	0,03	0,006	0,004	0,007
United Kingdom	1,23	0,96	0,96	0,09	0,07	0,07	0,009	0,007	0,023
Sweden	1,22	0,98	1,03	0,09	0,08	0,05	0,012	0,010	0,018
Mean	*1,10*	*0,83*	*0,95*	*0,075*	*0,061*	*0,055*	*0,010*	*0,007*	*0,018*
Brazil	0,96	0,77	0,72	0,14	0,09	0,37	0,021	0,015	0,031
China	1,11	0,76	1,14	0,08	0,07	0,06	0,012	0,007	0,022
Korea	0,77	0,55	0,80	0,08	0,07	0,06	0,012	0,008	0,021
Hong-Kong	1,24	0,90	1,06	0,09	0,08	0,07	0,014	0,009	0,027
Indonesia	1,36	0,82	1,58	0,13	0,11	0,10	0,015	0,013	0,028
Malaysia	1,09	0,75	1,11	0,10	0,08	0,07	0,011	0,009	0,016
Singapore	1,01	0,81	0,73	0,10	0,09	0,06	0,017	0,013	0,021
Taiwan	1,27	0,97	1,02	0,11	0,10	0,08	0,012	0,008	0,031
Thaïland	0,98	0,77	0,79	0,10	0,08	0,06	0,011	0,009	0,021
Mean	*1,09*	*0,79*	*0,99*	*0,103*	*0,086*	*0,103*	*0,014*	*0,010*	*0,024*

Panel B :

	Size	Variation of sales over 2 years in %			Variation over 2 year of book value of equity in excess of net income in %			Ratio of invetsment over 2 years compared to depreciation allowances		
	Mean	Mean	Median	S.D	Mean	Median	S.D	Mean	Median	S.D
USA	*7.72*	*0.39*	*0.25*	*0.51*	*0.10*	*-0.02*	*0.68*	*1.35*	*1.10*	*0.87*
Germany	6,91	0.22	0.16	0.31	-0.02	-0.08	0.33	1.14	1.02	0.63
Australia	6,05	0.69	0.33	1.26	0.28	-0.06	1.27	2.04	1.30	2.70
Canada	7,14	0.56	0.29	0.95	0.15	-0.05	0.67	1.88	1.42	1.72
France	7,00	0.25	0.16	0.34	0.02	-0.08	0.41	1.22	1.12	0.69
Italy	7,37	0.25	0.17	0.34	-0.08	-0.12	0.25	1.23	1.00	0.81
Japan	7,21	0.13	0.10	0.17	0.01	-0.02	0.13	1.20	1.10	0.56
United Kingdom	6,96	0.35	0.21	0.62	0.03	-0.11	0.73	1.26	1.02	0.93
Sweden	6,77	0.31	0.20	0.47	-0.03	-0.13	0.52	0.99	0.90	0.58
Mean	*6,93*	*0.34*	*0.20*	*0.56*	*0.04*	*-0.08*	*0.54*	*1.37*	*1.11*	*1.08*
Brazil	7,65	0.43	0.35	0.35	-0.09	-0.16	0.55	1.71	1.50	0.93
China	6,97	0.61	0.48	0.53	0.03	-0.04	0.23	2.48	2.19	1.58
Korea	7,37	0.27	0.23	0.29	-0.02	-0.04	0.24	1.64	1.39	1.00
Hong-Kong	6,93	0.51	0.34	0.69	0.13	-0.05	0.71	2.40	1.68	2.07
Indonesia	6,32	0.51	0.41	0.41	-0.03	-0.09	0.56	1.88	1.63	1.16
Malaysia	5,44	0.40	0.28	0.46	-0.01	-0.05	0.23	1.85	1.49	1.30

Singapore	5,83	0.45	0.34	0.50	-0.01	-0.07	0.35	1.90	1.51	1.25
Taiwan	6,95	0.48	0.40	0.44	-0.05	-0.07	0.23	1.79	1.57	1.13
Thaïland	5,63	0.34	0.25	0.36	-0.09	-0.14	0.32	1.66	1.38	1.25
Mean	*6,57*	*0.45*	*0.34*	*0.45*	*-0.02*	*-0.08*	*0.38*	*1.93*	*1.59*	*1.30*

The accounting measures of past growth were selected based on the methodology inspired by Hribar and Yehuda (Hribar & Yehuda, 2008). Three basic variables were measured: the variation of sales over 2 years in %, variation of book value of equity in excess of net income in%, and the ratio of investment over 2 years compared to past depreciation during these past years (measured by the items WS.Sales, WS.TotalCommonEquity, WS.NetIncome, and WS.CapitalExpendituresCFStmt WS.DepreciationDeplAmortExpense of Worldscope database from Thomson Reuters). According to the first and the third indicator, the emerging countries have experienced the sharpest growth.
These variables measuring the past growth have been combined into a synthetic indicator which varies from 0 (lowest growth) to 1 (highest growth). The detailed calculation of this indicator is given in Annex.

4. The Empirical Results

We comment, in the first paragraph, the different level of association between market values, expected earnings and their expected variation while omitting the supposed impact of dividends. We, then, discuss the possible effects of the bias associated with used forecasts. Finally, we propose a series of estimates of the expected implicit rates of return derived from these association relations.

4.1 Association between market values and expected earnings without taking into account dividends

The estimation of the equation (7) requires a preliminary measurement of the rate r to calculate the abnormal earnings growth. Since this rate is not directly observable and that it intervenes in the calculation of expected earnings per share cum dividend, we initially ignore the impact of $r \cdot DPS_1$. Table 3 provides an estimate for 18 countries studied. Expected earnings per share for the next year are significantly associated with stock prices in all countries. The primary role of expected earnings in valuation is therefore general, even if the intensity of the association varies considerably (8.77 on average for emerging countries against 6.81 for the USA and 12.10 for other developed countries.

The increase in earnings per share is significantly associated with market value in the case of developed countries but this is not always true in case of emerging countries (the coefficients are not significant for Brazil and Malaysia).The average of these coefficients is 15.63 for USA, 19.79 for other developed countries and 26.7 for emerging countries.

The coefficient associated with the composite measure of growth are mostly negative and non-significant in developed countries (-0.047 for the USA and on average -0.006 for others),with a notable exception of Japan (0.188). This coefficient is positive on average in emerging markets (0.200) but significant only for Hong Kong, Indonesia, Malaysia and Thailand. Note that according to the equation (5), the expected sign for this variable depends on that of the term h. It can be positive and negative according to the degree of persistence and depending on the rate of growth (c), speed (γ)and the ability to persist (δ) which characterize the value creation potential of the firm. When it is negative (positive), only the capitalization of the expected increase in the short-term earnings tends to over value (under value) the share and this factor has made the necessary correction. The empirical results suggest that during this period, growth in short terms earnings was not sustainable over a long period (except Japan, which displays very poor performance). In contrast, on average, in the emerging countries, the short-term variation of earnings does not fully realize long-term growth potential.

The coefficients of the variable size are significant in all countries. But it is negative in the USA (-0.022) and in Korea and positive in emerging countries (0.124) or other developed countries (0.079). The American sample is large and one that offers the greatest variety of business sizes.

Table 3. Association between market values, expected earnings and growth

This table presents the estimated values of the coefficients and their T for a regression model whose dependent variable is market capitalization at year end normalized by total assets, and the independent variables are expected earnings per share for the coming year and expected earnings growth for the following year normalized by total assets per share and a synthetic accounting variable measuring the past growth. The size was introduced as a control variable. The regressions were carried out by country with dummies by period. The coefficients T were calculated from "heteroskedasticity consistent standard errors". The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial. The observations belonging to extreme percentiles for the dependent variable and the first two independent variables have been eliminated. Finally, we have conserved companies appearing at least three times during the period.

	EPS1		EPS2-EPS1		Growth Rank		Size				Number of Observations
	b1	T	b2	T	b3	T	b4	T	R2	F	
USA	6.810	21.356	15.629	14.187	-0.047	-1.014	-0.022	-3.423	0.423	354.609	5 333
Germany	12.922	15.080	32.073	5.353	0.040	0.416	0.092	6.495	0.751	158.052	588
Australia	8.916	10.496	12.206	3.717	0.273	2.423	0.114	6.775	0.642	111.390	695
Canada	8.085	15.259	8.533	6.033	-0.349	-3.772	0.073	6.599	0.545	71.331	667
France	14.564	17.328	21.376	6.792	0.028	0.341	0.068	7.762	0.704	148.086	698
Italy	13.253	17.161	23.849	5.985	0.071	0.931	0.054	4.579	0.760	84.716	307
Japan	15.635	50.469	21.149	13.787	0.188	9.095	0.056	12.805	0.745	900.015	3 400
United Kingdom	9.975	11.951	17.493	7.509	-0.102	-1.038	0.119	10.035	0.577	104.262	852
Sweden	13.479	23.884	21.653	5.786	-0.196	-1.494	0.058	4.253	0.750	96.495	365
Other developed countries	12.104		19.792		-0.006		0.079				7 572
Brazil	4.729	4.475	1.384	0.695	0.114	0.836	0.162	5.514	0.436	13.862	209
China	6.136	4.962	11.447	2.025	0.160	0.907	0.106	3.719	0.313	11.049	279
Korea	9.325	8.367	6.084	2.828	0.147	1.105	-0.036	-1.826	0.601	33.479	256
Hong-Kong	8.865	14.432	9.473	5.853	0.454	3.972	0.181	10.894	0.568	64.672	552
Indonesia	10.333	9.111	9.736	3.336	0.326	2.280	0.158	4.835	0.801	70.107	203
Malaysia	11.706	23.695	-0.412	-0.183	0.331	4.116	0.108	4.326	0.772	120.188	402
Singapore	9.595	13.413	12.575	4.776	0.003	0.022	0.202	11.016	0.691	47.254	244
Taïwan	10.048	27.407	8.152	6.129	0.042	0.649	0.099	7.136	0.821	173.904	430
Thaïland	8.204	10.124	6.868	2.858	0.224	2.612	0.134	7.656	0.657	56.446	336
Emerging countries	8.771		7.256		0.200		0.124				2 911

4.2 Quality of forecasts and association of variables.

The coverage of various stocks by financial analysts is certainly uneven in quantity and quality according to the countries concerned. It is not, therefore, clear that the EPS forecast reported by IBES constitute a measure of market expectations, endowed with a homogeneous quality. Table 4 provides a series of measures of forecast errors characterizing each country at the end of the period. The average absolute error represents 4.76% of average score in USA, 12.01% in other developed countries and 14.42% in emerging countries. The quality of forecasts is significantly higher in the USA. The disparities among countries are strong: Italy and Brazil have the highest values, while Australia and Taiwan have the lowest. The average error is positive, suggesting that analysts are pessimistic before publication of earnings, either because they have been conducted by the management ("earning guidance") or because they are encouraged not to displease the firms: 0.93% of average score in USA, 2.95 % for other developed countries and 0.57% for emerging countries. However, disparities are very large among countries. The averages are thus negative for Australia and Japan and for more than half of emerging countries. It is possible that analysts' behaviors are very heterogeneous. If during this period FD regulation has, for example, prompted financial analysts to no longer express an unfounded optimism to USA, the situation had been different in other countries. Therefore, it is possible that the market holds expectations for the coming earnings per share, in some cases exceed the forecast reported by IBES, and in other lower. The quality of estimates of association links between expected earnings and market value is affected.

Table 4. Forecast errors and initial optimism

This table presents the forecast errors for earnings per share for the year studied. The errors are estimated from the available year end forecast. The values were normalized by total assets per share. The mean values provide an estimate of bias, that of absolute values a measure of precision. These mean values were divided by the ratio of expected EPS divided by total assets per share to obtain a measure of earnings in %. This estimate was preferred to the mean of relative errors, given the presence of low values for certain earnings per share. The initial optimism is measured by the ratio: difference between earnings per share forecast at the beginning of the year and EPS realized in the previous year, divided by total assets per share at the beginning of the year. The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial. The sample is that used previously, except for the measurement of initial optimism which lack certain observations because of the lag of a year.

	Error = (EPS real- EPS expected) / Total assets per share				EPS expected / Total assets per share	Ratios compared to mean expected EPS		Initial optimism	
	Value		Absolute value		Value	Mean Error / Mean value Mean	S.D	Value	
	Mean	S.D	Mean	S.D	Mean			Mean	S.D
USA	0.09%	1.55%	0.46%	1.48%	9.68%	0.93%	4.76%	17.22%	35.23%
Germany	0.28%	1.50%	0.89%	1.24%	6.97%	4.05%	12.69%	20.05%	83.92%
Australia	-0.04%	1.97%	0.88%	1.77%	10.50%	-0.39%	8.37%	20.46%	54.34%
Canada	0.01%	1.24%	0.67%	1.05%	7.23%	0.18%	9.28%	14.44%	41.55%
France	0.35%	1.74%	0.87%	1.55%	6.30%	5.57%	13.79%	10.53%	40.20%
Italy	0.47%	2.55%	1.00%	2.40%	5.45%	8.63%	18.27%	5.56%	54.94%
Japan	-0.03%	0.77%	0.44%	0.63%	4.36%	-0.75%	10.14%	20.47%	47.92%
United Kingdom	0.21%	1.84%	0.96%	1.59%	7.91%	2.61%	12.09%	12.02%	30.50%
Sweden	0.31%	1.76%	0.96%	1.50%	8.36%	3.72%	11.47%	16.79%	57.87%
Other developed countries	0.20%	1.67%	0.83%	1.47%	7.13%	2.95%	12.01%	15.04%	51.40%
Brazil	0.24%	3.76%	1.88%	3.27%	10.57%	2.24%	17.82%	39.33%	267.16%
China	-0.11%	1.51%	0.86%	1.25%	7.44%	-1.49%	11.60%	14.24%	34.24%
Korea	-0.01%	1.53%	1.00%	1.16%	7.32%	-0.13%	13.68%	15.96%	38.80%
Hong Kong	0.00%	2.91%	1.37%	2.57%	8.95%	-0.05%	15.31%	14.35%	41.79%
Indonesia	-0.57%	4.23%	2.10%	3.71%	12.25%	-4.63%	17.17%	16.97%	42.54%
Malaysia	0.43%	4.00%	1.50%	3.73%	9.16%	4.68%	16.34%	13.91%	50.46%
Singapore	0.51%	4.46%	1.48%	4.23%	9.38%	5.47%	15.84%	11.18%	41.84%
Taiwan	-0.15%	1.76%	1.05%	1.42%	10.76%	-1.43%	9.75%	15.40%	29.62%
Thailand	0.04%	1.87%	1.13%	1.50%	9.20%	0.45%	12.26%	16.80%	50.44%
Emerging countries	0.04%	2.89%	1.38%	2.54%	9.45%	0.57%	14.42%	17.57%	66.32%

The analysts' behavior can vary according to the forecast horizon, with in the same country. More it is distant, more it is difficult to verify the acuteness and more it is easy to be optimistic. Bartov et al. (2002) suggest that analysts have an interest in optimism at the beginning of the year and then to revise gradually their forecasts to end the year in pessimistic situation. They accumulate the advantage of revealing flattering long term forecasts without exposing business leaders to announce disappointing realized results. To characterize a possible initial optimism, we have calculated the gap in the beginning of the year between the forecast earnings and last known earning per share, which is to say that of the past year. All these measured have been normalized by total assets per share. The averages shown in table 4 reflect a general optimism: the expected evolution expressed in % of average earnings for concerned countries is of 17.22% in USA, 15.4% in other developed countries and 17.57% in emerging countries.

The presence of a bias in the beginning of a period and a possibly different bias at the end of the period doubly affect the measurement of the expected variation of earnings per share. If the forecast for one year is optimistic and the short-term pessimistic, the variation between the two overestimates the progression really expected by the market. If the short-term forecast is infected with a sense of optimism, but that of one year is little concerned the same variation under estimate the actually

anticipated growth. Finally, if only the forecast in the short term is biased, the impact is identical on both variables: expected earnings and anticipated growth and these variables are found correlated. To isolate the most severe effects of these manipulations of forecasts, we are inspired by the method used by Tian (2009). We isolated in each country the forecast likely to be most affected by manipulation. To do this, we have used two criteria. First, the forecast (firm-year) must be initially optimistic (the expected earnings early in the year is higher than the earnings per share published last year). Second, the revision of the forecast during the period must be abnormally pessimistic. To determine this second point, we have regressed, for each country, the variation of the forecasts during the period (normalized by total assets per share) on the stock return over the same period in order to eliminate the impact of the information taken into account by the market. We, then, calculated the forecasting residuals and we considered that if these residuals were negative and positive initial optimism, then we were faced with a case which could be suspected of strong manipulation. Table 5 resumed the regression carried out in table 3 but by combining a dummy variable taking the value 1 in a suspected case of manipulation and variables related to earnings and variation of earnings.

The results obtained in the American market are as per expectations. The suspected cases of manipulation of the forecasts are associated with a coefficient of valuation of expected earnings significantly higher (a difference of 1.634). The market "would correct" the under estimation by the analysts. The coefficients associated to expected variations of earnings is negative but nonsignificant (-0.025). The correction coefficients related to growth is negative (-0.177) but becomes significant. In contrast, the effects are negligible for other developed countries (with the exception of Germany). The lack of results may be due to the small size of samples or less elaborated forecasts management by analysts.

4.3 Estimation of expected implied rate of return and implied absnormal growth by country

Taking into account the dividends per share in the estimation of equation (7) requires knowledge of the expected rate of return r. Moreover, if the theoretical model is verified; the same rate r should be equal to $\sqrt{\left(\frac{\beta_1}{2\cdot\beta_2}\right)^2+\frac{1}{\beta_2}}-\frac{\beta_1}{2\cdot\beta_2}$. To avoid having to assume zero dividends and thereby introducing a bias in the estimation of the expected implicit rate of return, we proceed iteratively until this implicit rate for the country concerned is equal to that which we used to calculate the abnormal earnings growth. The estimates of the rate r and g were obtained from the coefficients of β_1 and β_2, only. This allows avoiding taking into account the effects related to the manipulation of forecasts. It is likely that in these cases, the market "corrects" the analysts' forecasts and the coefficient obtained would be affected by this correction (see (Easton & Sommers, 2007)).

The results obtained in paragraph 4.1 are confirmed in Table 6. In all countries expected earnings by the analysts is strongly associated with market value. The coefficients vary across geographic zones (7.27 in USA, 11.39 for other developed countries and 7.90 for emerging countries).The increase in earnings per share is strongly associated with market value in the case of other developed countries but this is not always the case in emerging countries. In the case of developed countries, using a PEG[1] based heuristics helps to improve the analysis of the market value of securities, beyond the information provided by the forward PE ratio. These two determinants can lead to overvaluation and require correction (case of USA and Canada where the coefficients associated with the composite variable of growth is significantly negative) and more rarely to an undervaluation (Japan).The results are mixed for emerging countries. The information content of the expected abnormal increase in earnings per share appears more limited. The coefficients associated are much lower (not meaningful for Brazil). The links between market value and earnings are more difficult to identify solely from the next two years earnings per share forecast. The reason can come from lower quality financial analysis. But also, the values are certainly dependent on other factors describing the growth opportunities in long term. The historical measurement of the past growth is of little use (coefficients significant in 3 cases out of 9). The traditional valuation heuristics should therefore be handled with much more prudence in these environments.

[1] It is not, here, expected earnings per share but a measure of abnormal growth.

Table 5. Association between market values, expected earnings, growth and manipulation of forecasts

This tables table presents the estimated values of the coefficients and their T for a regression model whose dependent variable is market capitalization at year end normalized by total assets, and independent variables are expected earnings per share for the coming year and expected earnings growth for the following year normalized by total assets per share and a synthetic variable measuring the past growth. The size was introduced as a control variable. The dummy variable Dm takes the value 1 if a manipulation index has been estimated. The regressions were carried out by country with dummies by period. The coefficients T were calculated from "heteroskedasticity consistent standard errors". The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial. The observations belonging to extreme percentiles for the dependent variables and the first two independent variables were eliminated. Finally, we have conserved companies appearing at least three times during the period.

	EPS_1		EPS_1*D_m		EPS_2-EPS_1		$EPS_2-EPS_1*D_m$		Growth Rank		Size				Number
	b_1	T	B_{1m}	T	B_2	T	B_{2m}	T	b_3	T	b_4	T	R2	F	of Obs.
USA	7.466	21.679	1.634	2.859	17.299	13.712	-0.025	-0.009	-0.117	-2.279	0.028	3.521	0.463	433.489	5 533
Germany	12.409	13.778	5.618	1.594	36.372	5.322	-27.435	-2.920	0.062	0.632	0.090	6.564	0.751	158.052	588
Australia	9.320	10.590	-1.520	-1.092	12.076	4.345	-0.155	-0.013	0.251	2.234	0.113	6.831	0.642	111.390	695
Canada	8.056	14.982	0.573	0.759	7.784	4.824	2.266	0.671	-0.333	-3.559	0.073	6.646	0.545	71.331	667
France	14.431	16.952	-0.340	-0.304	22.804	6.355	-7.080	-1.317	0.034	0.422	0.065	7.556	0.704	148.086	698
Italy	12.949	16.314	1.658	1.285	25.930	5.640	-8.797	-1.255	0.062	0.791	0.056	4.563	0.760	84.716	307
Japan	15.510	47.160	0.694	1.293	22.000	13.032	-3.115	-0.930	0.187	9.076	0.057	12.252	0.745	900.015	3 400
United Kingdom	10.070	11.782	0.072	0.075	16.733	5.910	3.082	0.701	-0.103	-1.059	0.120	10.163	0.577	104.262	852
Sweden	13.431	23.827	0.118	0.099	21.988	5.282	-1.788	-0.297	-0.190	-1.511	0.057	4.233	0.750	96.495	365
Other developed countries	12.022		0.859		20.711		-5.378		-0.004		0.079				7 572
Brazil	4.210	3.481	0.929	0.837	-1.138	-0.235	3.661	0.683	0.121	0.880	0.151	5.332	0.436	13.862	209
China	6.088	4.836	-0.426	-0.233	8.651	2.541	8.448	0.533	0.160	0.904	0.108	3.629	0.313	11.049	279
Korea	9.549	8.959	-2.615	-2.061	7.916	2.855	-2.347	-0.754	0.150	1.163	-0.036	-1.839	0.601	33.479	256
Hong Kong	8.447	14.082	2.908	2.256	9.213	5.516	-2.716	-0.535	0.467	4.172	0.187	11.351	0.568	64.672	552
Indonesia	9.474	10.728	2.380	1.376	7.647	4.402	1.798	0.228	0.331	2.286	0.164	4.977	0.801	70.107	203
Malaysia	11.734	20.009	-0.114	-0.151	-0.648	-0.255	0.717	0.173	0.330	4.006	0.108	4.292	0.772	120.188	402
Singapore	9.590	14.592	2.080	1.165	12.042	5.283	-1.830	-0.230	0.039	0.335	0.209	11.209	0.691	47.254	244
Taiwan	9.984	27.565	-0.152	-0.269	6.428	6.004	8.716	2.758	0.056	0.876	0.098	7.447	0.821	173.904	430
Thailand	8.207	10.109	0.325	0.276	6.853	2.736	0.706	0.116	0.225	2.607	0.135	7.520	0.657	56.446	336
Emerging countries	8.587		0.591		6.329		1.906		0.209		0.125				2 911

The model appears to capture a hierarchy of expected rates of return, although estimates for emerging markets remain very imprecise, country by country. The estimates of expected rates of return are respectively of 10.9% for USA, 8% for other developed countries and 12.3% for the emerging countries. Within the last two zones, the estimates vary across countries. For developed countries, the expected returns are lowest in Japan (6.0%) and in the Eurozone (6.5% for France and 7% for Germany) and the highest in Canada (11.4%) and Australia (10.1%) Among emerging countries, Brazil (24.7%) and China (14.8%) topped. Malaysia (8.8%) , Taiwan(9.7%), Singapore (9.8%) and Korea (9.9%) are in the tail. The implicit values of the parameter g which governs the abnormal earnings growth are strongly negative (-0.406 for USA, on average of -0.595 for developed countries and 1.013 for emerging countries[2] (-0.083 if we limit the extreme value to -1). It is interesting to note that no estimates approach the hypothesis advanced by Ohlson and Juettner –Nauroth, namely a positive value close to a long-term rate of growth.

[2] This factor cannot be below -1, according to our model. No value appears significantly lower, except the case of Malaysia.

5. Robustness Tests

The valuation of assets depends in the model used on the discount rate required by the market. Initially, we study the effects of two factors associated in the literature to the discount rate, the book to market ratio and the size. Then, we take into account the differences in precision in the earnings per share forecast. On the one hand, we can assume that more the forecasts are imprecise, the higher the risk. On the other hand, the more forecasts are precise, the more consensuses of analysts is close to market expectations. In both cases the measures of association should be affected. We, then, assume that the coefficients of persistence (δ) and speed (γ) that characterize this model may differ if the abnormal growth is positive , or if it is negative. We replicate the test on a sub-sample composed solely of positive expected variations. Finally, we conduct a direct estimate of the coefficient g which governs the dynamics of the abnormal growth in earnings per share and compare with the implicit estimates derived from the model.

5.1 Implied rate of return and risk factors

We classified the companies of each country into two subcategories, those whose studied factor is low and those with high studied factor. The same method was used for the Book-to-Market ratio and for the size. As these ratios vary country by country and year by year, we chose to classify by companies and not by firm-year to avoid introducing the bias related to the period. The classification is carried out according to the following protocol. For each country, firms in the sample 2008 were divided into two groups around the median of used indicator (BM ratio or size). The same companies were taken in 2007. For those contained therein; the average ratio was performed for each of the sub-groups. If a company appears in 2007 and does not exist in the sample in 2008, it is classified in the sub-population to whom it is the nearest (the smallest distance from its indicator compared to the two averages). The classification is retained for the following. The same approach is repeated in 2006 and beyond. Thus, for each of the indicator (BM ratio or size), once a company is classified in her country as big or small. The classification has the advantage of being independent of years and the inconvenience of not taking into account a possible change in the characteristics of the company over the period.

From table 7 we can see that companies with the ratio "book to market" high generally have a low coefficient associated with expected earnings (exceptions are Italy and United Kingdom for developed countries and China for emerging countries): 2.92 against 6.27 to USA, 8.40 against 9.73 for other developed countries and 4.19 against 7.72 for the emerging countries. The observation is consistent with two explanations: (i) the PER are lower for these companies, (ii) the weight of PER is more reduced in the valuation of shares. The test does not make it possible to decide between these two reasons. The same observation can be made for the coefficient associated with the expected abnormal variation of earnings per share. We have 4.52 against 17.48 for the USA, 8.68 against 20.80 for other developed countries and 2.93 against 7.38 for emerging (with the exception of Italy and United Kingdom). The contribution of amended PEG in the valuation is certainly much reduced for these populations which probably contain many business of extremely poor performance. The expected implied rate of return is high for companies with the high "book to market" ratio in the three geographic zones. This hierarchy is consistent with the presence of a stronger risk factor for these sub-samples, although the rate obtained for US companies in high ratio seems extremely high (24.8%). Finally, the synthetic coefficient g, linked to persistence (δ) and the speed (γ) of abnormal growth is lower for firms of "book to Market" ratio high. This is consistent with the presence of fewer opportunities for growth, even in the existence of deceleration of expected abnormal earnings.

Companies of big size as a general rule have a higher coefficient associated with expected earnings (the only exceptions are Australia and United Kingdom) :7.59 against 6.94 for USA , 12.23 against 10.30 for other developed countries and 8.64 against 6.59 for the emerging countries. The observation is compatible with two explanations: (i) the PER are higher for these companies, (ii) the weight of PER is greater in the valuation of shares. The same observation cannot be carried out for the coefficient associated with the expected abnormal variation of earnings per share. We have a smaller coefficient for large companies in USA (16.57 against 18.15) and the opposite in the other two zones (27.15 against 15.52 for other developed countries and 12.36 against 5.52 for emerging), with two exceptions Canada and Korea. It is possible that the U.S. sample contains relatively more small performing businesses, for which the market has more visibility on their future growth. The expected implied rate of return is greater for small businesses within the 3 geographic zones. This hierarchy is consistent with the presence of a risk factor related to the size, but the difference between the obtained rates for US

companies is low (10.7% against 11.2%). Finally, the synthetic coefficient g, linked to persistence (δ) and speed (γ) of abnormal growth is lower for small firms in other developed countries and emerging countries and slightly higher in USA. This is consistent with the presence of more numerous growth firms in the American sub-sample of small companies.

5.2 Implied return and precision of forecasts

The precision with which the analysts forecast the earnings per share can have a double influence on the parameter of the valuation model. On one hand, the more the analysts' forecasts are accurate, the greater the correlation with market expectations. The measurement errors in dependent variables are reduced. On the other hand, the forecast error may be related to risk of asset/share. The more it is difficult to predict the earnings, the more high is the risk of a share. In this case, one can hypothesize that the rate of return required by shareholders should be higher.

The forecast error is measured by the absolute value of the difference between the consensus of analysts at year and the final earnings reported by IBES, so benefiting from homogenous measurement. The difference is normalized, as is always the case, by the value of share in the beginning of year. For each country separately, the companies were ranked according to these normalized differences in two groups: those with high precision (values below the median) and those with a low precision.

The table 8 shows that in developed countries, the coefficient associated to expected earnings is higher when the precision is high (8.38 against 6.53 in the USA, 12.26 against 10.59 in other developed countries except the United Kingdom and Sweden). The differences are not significant in emerging countries. This may be due to a lower rate of return required by shareholders and therefore a higher PER or a better measure of expected earnings. The effect is less noticeable for emerging countries where in general the link between the market value and expected earnings by the analysts is less strong. The expected effect on the coefficient associated with the abnormal variation of earnings is more ambiguous. On the one side, if the forecast error is correlated with a risk factor, the lower rate of return increases the value of the coefficient. It is the same if the variation expected by the market is measured with less error. On the other hand, it is possible that the companies whose performances are most difficult to predict are those who benefit from more opportunities of growth. If these last are persistent, then the parameter g of the model is larger and the coefficient associated higher. But it is also possible that the reverse is true. We see in the table 8 that in the USA the coefficient is greater when the precision is high (25.31 against 16.31) and that it is smaller in other developed countries (17.58 against 22.54 with the exception of Australia and Canada) and in most emerging countries.

5.3 Direct estimates of the rates of persistence of the abnormal earnings growth

One of the results presented concerns the dynamics of the "abnormal" growth of earnings per share. Contrary to the hypothesis advanced by Ohlson and Juettner-Nauroth (2005), the theoretical model developed in section 2 suggest that this abnormal growth does not necessarily follow a constant increase in the long term, but on the contrary guided by various dynamics of which some are compatible with limited persistence. The implicit measures that are derived from the estimates of the associated coefficients of expected earnings and from expected abnormal growth are all consistent with the hypothesis of limited persistence (the negative parameter g). In order to complement this empirical result, we proceeded to the estimation of an autoregressive model with a lag of one year for expected abnormal variation. The need to dispose of consecutive measurement has reduced the size of the sample. The table 9 provides the obtained results.

It can be noted that for the most important sample, the USA, the two estimates of g are very close (-0.394 and -0.399). In the case of other developed countries, the direct estimate is higher than implicit (-0.364 and -0.521), while remaining in the order of the magnitude not too far, except for Canada. In the case of emerging countries, the differences are more marked (-0.456 and -1.136) and especially the found implicit values are smaller than -1. As the implicit values of the g are obtained from the relation$g = -\frac{\beta_1}{\beta_2}$, the errors contained in the implicit values most certainly come from an under valuation of the coefficient β_2 attached to the abnormal growth. The values found in emerging countries and Canada are low in comparison to those obtained in other countries, growth in earnings per share are less well anticipated by the consensus of the analysts. It is also noted that these samples are small in size.

International Journal of Economics and Financial Issues
Vol. 4, No. 1, 2014, pp.196-216
ISSN: 2146-4138
www.econjournals.com

Table 6. Expected implicit rates of return as a function of market value, expected earnings and growth

This tables presents the estimated values for the coefficients and their T for a regression model whose dependent variable is market capitalization at year-end normalized by total assets, and the independent variables are the earnings per share for the coming year and increase in expected earnings for the following year plus the income generated by the reinvestment of dividends and normalized by total assets per share, the same variable multiplied by a dummy variable indicating the suspected manipulation of forecast and a synthetic accounting variable measuring the past growth. The size was introduced as a control variable, as well as dummy variable for each reporting year. The regression were carried out by country , but taking into account all the years. The coefficients for year dummies are not reported. The coefficients T were calculated from "heteroskedasticity consistent standard errors". The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial.

	EPS_1		$[EPS_1]*D_m$		$EPS_2-EPS_1+r.DPS_1$		$[EPS_2-EPS_1+r.DPS_1]*D_m$		Growth Rank		Size			Implicites measures		No. of obs.
	β_1	T	β_{1m}	T	β_2	T	β_{2m}	T	β_3	T	β_4	T	R^2	*r*	*g*	
USA	7.265	21.071	1.697	2.810	17.883	14.174	-0.113	-0.039	-0.140	-2.720	0.022	2.843	0.472	10.9%	-0.406	5 533
Germany	11.849	12.093	6.057	1.677	34.672	5.255	-25.987	-2.825	0.024	0.250	0.088	6.296	0.747	7.0%	-0.342	588
Australia	8.564	9.436	-1.473	-1.155	13.690	4.659	1.101	0.103	0.172	1.551	0.117	7.548	0.667	10.1%	-0.626	695
Canada	7.894	14.504	0.608	0.782	7.478	4.376	2.823	0.823	-0.359	-3.738	0.073	6.585	0.544	11.4%	-1.056	667
France	13.862	16.126	-0.079	-0.064	23.977	6.650	-8.138	-1.483	0.016	0.199	0.063	7.482	0.710	6.5%	-0.578	698
Italy	11.536	13.738	2.882	1.916	29.489	4.583	-13.781	-1.952	0.018	0.236	0.054	4.574	0.772	7.3%	-0.390	307
Japan	15.252	44.817	0.703	1.241	22.295	12.253	-3.101	-0.944	0.180	8.772	0.057	12.348	0.746	6.0%	-0.684	3 400
United Kingdom	9.646	11.235	0.123	0.121	17.487	6.180	2.328	0.549	-0.164	-1.659	0.117	10.066	0.585	8.9%	-0.549	852
Sweden	12.539	22.766	0.211	0.177	23.422	5.558	-2.114	-0.332	-0.226	-1.818	0.054	4.132	0.763	7.0%	-0.535	365
Other developed countries	11.393		1.129		21.564		-5.859		-0.042		0.078			8.0%	-0.595	7 172
Brazil	2.959	2.168	1.013	0.870	4.400	1.580	1.843	0.563	0.141	1.030	0.148	5.188	0.488	24.7%	-0.673	209
China	5.449	4.258	-2.071	-0.687	8.860	2.883	14.428	0.798	0.160	0.908	0.110	3.747	0.328	14.8%	-0.615	279
Korea	9.314	8.547	-2.574	-1.967	8.250	3.167	-2.282	-0.731	0.138	1.098	-0.037	-1.857	0.627	9.9%	-1.129	256
Hong Kong	7.652	12.866	2.325	1.574	11.551	6.691	-0.238	-0.044	0.432	4.031	0.188	11.488	0.598	11.2%	-0.662	552
Indonesia	8.870	11.636	1.684	0.962	8.740	4.383	4.698	0.672	0.284	1.980	0.152	4.844	0.831	10.2%	-1.015	203
Malaysia	10.925	17.689	0.253	0.281	5.415	2.278	-2.913	-0.707	0.353	4.279	0.113	4.620	0.775	8.8%	-2.018	402
Singapore	8.850	12.679	3.264	1.910	13.770	6.503	-6.916	-1.141	-0.016	-0.142	0.205	11.005	0.707	9.8%	-0.643	244
Taiwan	9.644	26.248	-0.438	-0.684	6.491	6.109	7.982	2.433	0.019	0.290	0.096	7.290	0.828	9.7%	-1.486	430
Thailand	7.428	9.397	0.610	0.501	8.501	3.643	-0.132	-0.022	0.204	2.419	0.136	7.691	0.668	11.9%	-0.874	336
Emerging countries	7.899		0.452		8.442		1.830		0.191		0.123			12.3%	-1.013	2 911

Table 7. Expected implicit rates of return by country and risk factors

This table presents the estimated values of the first two coefficients and their T for a regression model whose dependent variables is market capitalization at year-end normalized by total assets, and the independent variables are the expected earnings per share for coming year and expected increase in earnings for the following year plus the income generated by the reinvestment of dividends and normalized by total assets per share, the same variables multiplied by a dummy variable indicating the suspected manipulation of forecasts and a synthetic accounting variable measuring the past growth. The size was introduced as a control variable, as well as dummy variables for each reporting year. The regression were carried out by country, but taking into account all the years. The coefficients T were calculated from "heteroskedasticity consistent standard errors". The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial.

Panel A : With partition of the samples according to the Book to Market ratio

	Low BM ratio							High BM ratio						
	EPS_1		EPS_2-EPS_1+r.DPS_1		Implicites measures		Number of obs.	EPS_1		EPS_2-EPS_1+r.DPS_1		Implicites measures		Number of obs.
	β_1	T	β_2	T	r	g		β_1	T	β_2	T	r	g	
USA	6.272	14.696	17.484	11.081	12.0%	-0.359	3 338	2.920	12.139	4.524	6.368	24.8%	-0.646	2 195
Germany	10.963	9.225	40.292	5.225	7.2%	-0.272	349	8.129	12.224	6.211	2.276	11.3%	-1.309	239
Australia	7.590	6.931	12.799	3.910	11.1%	-0.593	405	5.241	6.735	4.502	1.552	16.7%	-1.164	290
Canada	6.555	9.101	8.079	3.615	13.1%	-0.811	361	5.806	11.833	2.272	2.104	16.2%	-2.556	306
France	13.714	12.491	27.881	5.593	6.5%	-0.492	386	8.201	13.285	7.279	3.650	11.1%	-1.127	312
Italy	8.745	13.028	6.761	2.575	10.6%	-1.294	179	15.468	13.684	18.228	2.507	6.0%	-0.849	128
Japan	16.081	37.295	24.938	11.310	5.7%	-0.645	1 848	9.177	24.815	9.647	6.354	9.9%	-0.951	1 552
United Kingdom	3.668	11.507	8.578	8.645	18.9%	-0.428	440	6.865	6.412	15.764	5.360	11.5%	-0.436	412
Sweden	10.518	11.997	37.076	6.154	7.5%	-0.284	188	8.287	14.176	5.544	3.153	11.2%	-1.495	177
Other developed countries	9.729		20.801		10.1%	-0.602	4 156	8.397		8.681		11.7%	-1.236	3 416
Brazil	3.789	2.423	3.757	1.058	21.7%	-1.008	117	0.067	0.090	3.325	1.432	53.9%	-0.020	92
China	2.229	1.212	6.951	1.614	25.2%	-0.321	161	4.860	8.535	1.426	0.804	19.5%	-3.409	118
Korea	10.001	6.925	5.383	1.673	9.5%	-1.858	146	4.491	4.880	5.087	3.763	18.4%	-0.883	110
Hong Kong	6.193	8.490	11.296	5.268	13.0%	-0.548	313	4.364	10.192	1.597	1.221	21.3%	-2.732	239
Indonesia	9.884	11.678	10.855	4.274	9.2%	-0.911	128	3.819	9.396	2.110	1.744	23.2%	-1.810	75
Malaysia	10.729	11.770	5.534	1.531	8.9%	-1.939	240	4.789	12.720	-0.019	-0.162	nc	nc	162
Singapore	9.935	8.075	8.209	2.229	9.3%	-1.210	137	3.748	6.704	5.624	3.276	20.4%	-0.666	107
Taiwan	9.949	16.932	6.161	3.874	9.5%	-1.615	189	6.330	19.591	3.018	4.323	14.8%	-2.097	241
Thailand	6.808	6.206	8.278	2.279	12.7%	-0.823	194	5.273	14.138	4.168	3.592	16.8%	-1.265	142
Emerging countries	7.724		7.380		13.2%	-1.137	1 625	4.193		2.926		23.5%	-1.610	1 286

Panel B : With partition of the samples according to size

	Small Firms							Big Firms						
	EPS_1		EPS_2-EPS_1+r.DPS_1		Implicites measures		Number of obs.	EPS_1		EPS_2-EPS_1+r.DPS_1		Implicites measures		Number of obs.
	β_1	T	β_2	T	r	g		β_1	T	β_2	T	r	g	
USA	6.936	13.418	18.152	11.131	11.2%	-0.382	2 918	7.593	17.393	16.569	8.706	10.7%	-0.458	2 615
Germany	10.201	10.032	25.146	3.783	8.2%	-0.406	341	12.122	6.710	53.316	4.529	6.4%	-0.227	247
Australia	10.401	9.885	11.123	3.281	8.8%	-0.935	349	6.83	4.980	19.765	3.727	11.1%	-0.347	346
Canada	7.428	13.037	7.964	3.709	11.9%	-0.933	343	8.568	8.473	6.417	2.218	10.8%	-1.335	324
France	11.919	17.888	17.179	4.353	7.6%	-0.694	413	15.507	9.198	41.920	5.796	5.6%	-0.370	285
Italy	6.969	11.699	7.934	3.578	12.6%	-0.878	156	14.737	16.977	17.979	2.903	6.3%	-0.820	151
Japan	13.674	33.516	19.878	10.399	6.7%	-0.688	1 883	17.126	34.827	29.650	10.543	5.3%	-0.578	1 857
United Kingdom	10.406	7.473	13.069	3.739	8.7%	-0.796	406	9.317	8.426	20.204	4.780	9.0%	-0.461	446
Sweden	11.389	10.511	21.894	4.138	7.7%	-0.520	165	13.657	19.670	27.908	3.822	6.5%	-0.489	200
Other developed countries	10.298		15.523		9.0%	-0.731	4 056	12.233		27.145		7.6%	-0.578	3 856
Brazil	0.931	0.688	2.895	1.208	44.9%	-0.322	93	3.426	2.492	8.343	3.318	19.7%	-0.411	116
China	6.119	3.043	2.323	0.478	15.4%	-2.635	145	6.956	4.098	8.221	2.200	12.5%	-0.846	134
Korea	9.063	4.045	11.000	3.411	9.9%	-0.824	128	9.595	9.470	4.784	1.696	9.9%	-2.006	128
Hong Kong	6.695	7.945	8.402	5.016	12.9%	-0.797	296	8.217	9.708	20.053	5.657	9.8%	-0.410	256
Indonesia	3.683	10.188	0.103	0.106	27.0%	nc	95	10.327	13.454	12.168	5.190	8.8%	-0.849	108
Malaysia	8.849	13.668	4.298	1.926	10.7%	-2.059	202	11.833	14.970	10.075	2.549	7.9%	-1.175	200
Singapore	8.275	10.099	12.690	5.711	10.4%	-0.652	134	10.054	6.982	17.810	2.458	8.6%	-0.565	110
Taiwan	9.330	23.828	4.709	3.706	10.2%	-1.982	245	10.089	16.081	9.468	7.369	9.1%	-1.066	185
Thailand	6.339	9.621	3.244	1.951	14.7%	-1.954	195	7.272	4.758	20.317	4.391	10.6%	-0.358	141
Emerging countries	6.587		5.518		17.3%	-1.403	1 533	8.641		12.360		10.8%	-0.854	1 378

International Journal of Economics and Financial Issues
Vol. 4, No. 1, 2014, pp.196-216
ISSN: 2146-4138
www.econjournals.com

Table 8. Expected implicit rates of return expected by country and forecast accuracy

This table presents the estimated values for the first two coefficients and their T for a regression model whose dependent variable is market capitalization at year-end normalized by total assets , and the independent variables are the expected earnings per share for the coming year and expected earnings growth for the for the following year plus the income generated by the reinvestment of dividends and normalized by total assets per share, the same variables multiplied by a dummy variable indicating the suspected manipulation of the forecast and a synthetic accounting variable measuring the past growth. The size was introduced as a control variable, as well as dummy variables for each reporting year. The regressions were carried out by country, but taking into account all the years. The coefficients T were calculated from "heteroskedasticity consistent standard errors". The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial.

	High Precision							Low Precision						
	EPS_1		EPS_2-EPS_1+r.DPS_1		Implicites measures		No. of obs.	EPS_1		EPS_2-EPS_1+r.DPS_1		Implicites measures		No. of obs.
	β_1	T	β_2	T	r	g		β_1	T	β_2	T	r	g	
USA	8.378	11.686	25.307	7.988	9.3%	-0.331	2 396	6.533	15.954	16.314	12.351	11.8%	-0.400	3 137
Germany	13.101	11.191	23.294	2.702	6.8%	-0.562	321	10.364	8.198	39.355	4.784	7.5%	-0.263	267
Australia	9.459	11.584	29.451	8.031	8.4%	-0.321	405	8.144	7.669	12.304	4.117	10.6%	-0.662	309
Canada	10.296	11.480	15.613	5.556	8.6%	-0.659	392	6.627	9.628	6.200	3.391	13.4%	-1.069	275
France	16.182	14.264	22.251	3.704	5.7%	-0.727	391	12.510	11.214	23.693	5.046	7.1%	-0.528	307
Italy	12.670	23.010	3.279	1.558	7.7%	-3.864	154	10.775	13.050	33.554	7.035	7.5%	-0.321	153
Japan	16.325	26.352	16.722	5.282	5.8%	-0.976	1 713	13.671	27.589	21.966	10.201	6.6%	-0.622	1 687
United Kingdom	8.235	9.232	12.775	2.191	10.4%	-0.645	440	9.920	7.437	17.683	5.780	8.7%	-0.561	412
Sweden	11.808	17.732	17.280	6.546	7.6%	-0.683	190	12.726	15.213	25.594	4.813	6.9%	-0.497	175
Other developed countries	12.260		17.583		7.6%	-1.055	4 006	10.592		22.544		8.5%	-0.565	3 585
Brazil	4.172	2.136	2.780	0.521	21.0%	-1.506	105	1.971	1.202	6.594	2.142	26.8%	-0.299	104
China	0.836	0.224	-1.165	-0.096	nc	nc	130	8.890	9.437	8.733	2.859	10.2%	-1.018	149
Korea	13.323	7.408	3.946	0.802	7.3%	-3.377	121	8.994	5.980	6.987	3.205	10.3%	-1.287	135
Hong Kong	7.945	7.099	19.689	4.594	10.1%	-0.404	301	7.426	11.607	9.397	5.138	11.7%	-0.790	251
Indonesia	8.194	9.205	4.133	1.903	11.5%	-1.983	115	8.482	7.935	9.436	3.154	10.6%	-0.899	88
Malaysia	11.351	18.135	6.274	2.196	8.4%	-1.809	214	10.947	11.801	5.581	1.537	8.7%	-1.961	188
Singapore	10.690	8.751	14.396	4.371	8.4%	-0.743	137	7.443	8.694	14.479	8.105	11.1%	-0.514	107
Taiwan	9.167	19.838	9.557	7.870	9.9%	-0.959	215	10.023	18.455	5.154	3.615	9.5%	-1.945	215
Thailand	7.915	7.917	7.184	3.123	11.4%	-1.102	181	7.345	6.358	9.696	2.737	11.8%	-0.758	155
Emerging countries	8.177		7.422		11.0%	-1.485	1 519	7.947		8.451		12.3%	-1.052	1 392

International Journal of Economics and Financial Issues
Vol. 4, No. 1, 2014, pp.196-216
ISSN: 2146-4138
www.econjournals.com

Table 9. Direct estimates of the rate of persistence of abnormal earnings growth

This table presents the estimated values of the coefficients and their T for a regression model whose dependent variable is expected variation of abnormal earnings EPS2-EPS1+r.DPS1, normalized by total assets per share, and the independent variable is the same variable but shifted by one period. The sample is identical to that of table 11.The estimates of cost of capital have been included. The coefficients T were calculated from "heteroskedasticity consistent standard errors". The study period extends from 2001 to 2008.The data come from Worldscope and IBES databases provided by Thomson Financial.

	EPS_2-EPS_1+r.DPS_1				Table 11	Number of observations
	β_1	T	R^2	g	g implicite	
USA	0.606	24.945	0.460	-0.394	-0.399	3 165
Germany	0.556	9.056	0.367	-0.444	-0.306	413
Australia	0.601	5.504	0.450	-0.399	-0.676	490
Canada	0.595	5.635	0.334	-0.405	-0.910	360
France	0.617	11.492	0.410	-0.383	-0.544	477
Italy	0.624	11.729	0.461	-0.376	-0.375	209
Japan	0.519	19.169	0.310	-0.481	-0.587	2 177
United Kingdom	0.806	11.008	0.557	-0.194	-0.394	538
Sweden	0.772	9.934	0.585	-0.228	-0.377	243
Other developed countries	*0.636*			*-0.364*	*-0.521*	*4 907*
Brazil	0.605	9.289	0.415	-0.395	-0.263	111
China	0.404	4.643	0.231	-0.596	-1.520	137
Korea	0.466	4.360	0.255	-0.534	-1.313	130
Hong Kong	0.688	12.156	0.567	-0.312	-0.458	345
Indonesia	0.738	9.349	0.459	-0.272	-0.621	120
Malaysia	0.540	5.709	0.355	-0.460	-2.934	253
Singapore	0.579	7.804	0.314	-0.421	-0.835	158
Taiwan	0.439	8.639	0.352	-0.561	-1.518	193
Thailand	0.450	6.979	0.331	-0.550	-0.766	189
Emerging countries	*0.545*			*-0.456*	*-1.136*	*1 636*

6. Conclusion

The model of the type AEG (for example, (Ohlson & Juettner-Nauroth, 2005), (Ohlson & Gao, 2006)) provide a parsimonious way of valuing shares by referring to two variables: expected earnings per share and its expected "abnormal" growth. This paper shows that in the context of an international comparison, estimates of these two variables obtained from two years forecasts prepared by financial analysts (source: IBES) are significantly associated with the market values, at least in developed countries. In the latter case, the expected earnings per share in 2 years has an information content that complements a forecasting year. This observation is less evident in the case of the most of emerging countries.

The theoretical model that we developed suggest that a valuation based on only these two variables can lead to an under-valuation or to over-valuation according the type of growth experienced by the companies. Using a synthetic measure based on past accounting data, we show that in some countries (for example USA, Canada), a model of type AEG can lead to an over valuation of companies who have experienced a strong growth in the recent past. The past dynamics cannot be prolonged over a long period and a negative correction term is applied to these companies. In contrast, for others, the growth has not yet led to an increase in earnings per share, enough to account for all the value creation potential of these firms. In most of the emerging countries but also for certainly different reasons in Japan, a

positive corrective term is proposed. The study outlines the limitation of AEG models to explain the stock market values.

The results suggest that the abnormal growth of earning per share is unlikely to perpetuate by following a constant pace of progress as was initially suggested by Ohlson and Juettner-Naurauth. On a regular basis, the process that seems to best describe the expected evolution of this variable is autoregressive in nature with limited persistence. The estimates for developed countries are coherent on average (around 0.6 to USA and somewhat less for other developed countries). They remain very inaccurate in the case of emerging countries, but still very low. By suggesting using a long term rate of growth, O J-N contributes to propose specification of the models AEG strongly over estimating the values of shares. In addition, by accepting these more complex dynamics for the expected variation of abnormal earnings per share, we can deduce using the models AEG implicit values for the rate of return expected by investors. The results emphasize that these estimates remain consistent with the various commonly recognized factors of risk. Finally, we conclude with a practical remark: the combined use of two heuristics that practitioners frequently use in valuation, namely the PE ratio and PEG ratio is justified in the context of developed countries and unfortunately less powerful in emerging countries.

Acknowledgement

This research was supported by Lille School of Finance (Faculty of Finance, Bank and Accounting–USDL and SKEMA Business School).The authors have received countless advices and comments from Eric De Bodt. Errors and omissions remain their own responsibility.

References

Barth, M.E., Beaver, W.H., Landsman, W.R. (2001). The relevance of the value relevance literature for financial accounting standard setting: another view. Journal of Accounting and Economics 31, 77-104.

Bartov, E., Givoly, D., Hayn, C. (2002). The rewards to meeting or beating earnings expectations. Journal of Accounting and Economics, 33, 173-204.

Brief, R.P. (2007). Accounting Valuation Models: A Short Primer. ABACUS, 43(4), 429-437.

Easton, P.D., Sommers, G.A. (2007). Effect of Analysts' Optimism on Estimates of the Expected Rate of Return Implied by Earnings Forecasts. Journal of Accounting Research, 45(5), 983-1016.

Gode, D., Mohanram, P. (2003). Inferring the Cost of Capital Using the Ohlson–Juettner Model. Review of Accounting Studies, 8, 399-431.

Holthausen, R.W., Watts, R.L. (2001). The relevance of the value-relevance literature for financial accounting standard setting. Journal of Accounting and Economics, 31, 3-75.

Hribar, P., Yehuda, N. (2008). Reconciling growth and persistence as explanations for accrual mispricing. Working Paper University of Iowa.

Liu, J., Nissim, D., Thomas, J. (2007). Is Cash Flow King in Valuations ? Financial Analysts Journal, 63(2), 56-68.

Ohlson, J. A. (2005). On Accounting-Based Valuation Formulae. Review of Accounting Studies 10, 323-347.

Ohlson, J.A., Gao, Z. (2006). Earnings, Earnings Growth and Value. Foundations and Trends Accounting, 1(1), 1-70.

Ohlson, J., Juettner-Nauroth, B. (2005). Expected EPS and EPS Growth as determinants of Value. Review of Accounting Studies, 10(2-3), 349-365.

Penman, S.H. (2005). Discussion of ''On Accounting-Based Valuation Formulae'' and ''Expected EPS and EPS Growth as Determinants of Value". Review of Accounting Studies 10, 367-378.

Tian, Y. (2009). The impact of expectations manipulation on the usefulness of analyst forecasts in firm valuation. Working Paper University of Alberta.

Walker, M., Wang, P. (2003). Towards an Understanding of Profitability Analysis Within the Residual Income Valuation. Accounting and Business Research, 33(3), 235-246.

International Journal of Economics and Financial Issues
Vol. 4, No. 1, 2014, pp.196-216
ISSN: 2146-4138
www.econjournals.com

Annex

Method of calculation of the synthetic variable of growth and company rank according o their stage of growth

The synthetic variable y: is defined by:

$$y_{i,t} = \sum_{j=1}^{j=3} \frac{\left(x_{i,j,t} - \overline{x_{j,t}}\right)}{\sigma_{j,t}}$$

With

$$x_1 = \frac{\text{Sales}_t}{\text{Sales}_{t-2}} - 1$$

$$x_2 = \frac{\text{Equities}_t - \text{Equities}_{t-2} - \text{Net Income}_t - \text{Net Income}_{t-1}}{\text{Equities}_{t-2}}$$

$$x_3 = \frac{\text{Capital Expenditures}_t + \text{Capital Expenditures}_{t-1}}{\text{Depreciation}_t + \text{Depreciations}_{t-1}}$$

We have truncated their values using the fifth percentile as minimum and ninety fifth percentile as a maximum, the reference populations are all profitable firms of the country concerned. I n order to aggregate them; we calculated their values centered and reduced by country. The sum of the variable refers to synthetic growth.

Companies are then classified each year t as a function of this synthetic variabley.Their rank is normalized by the number of observations of the year and noted $R_{i,t}$. In order to take into account the persistent phenomenon, we have preferred an aggregate measure over two years.: $RC_{i,t} = (R_{i,t} + R_{i,t-1})/2$. Finally, to facilitate interpretation, we calculated : $1 - RC_{i,t}$.