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An Empirical Investigation of the Relevance of Investor Relations

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AN EMPIRICAL INVESTIGATION OF THE RELEVANCE OF INVESTOR RELATIONS

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An empirical investigation of the relevance of investor relations.

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1. Introduction

When reviewing the academic literature on the relationship owner versus manager and its impact on the formulation of corporate goals, it appears that there are two distinct approaches. The first approach places the owner/investor in the middle of the center; the sole task of the manager then is to maximize the owners' expected utility. In the second approach the owner/investor is only one participant of a group of participants, who are all trying to maximize their wealth by investing money, time or other resources in the firm. The first approach is usually labelled as the Anglo-Saxon concept while the second approach is usually labelled as the European concept.

The primary focus on the investor resulted in a relatively more profit-driven way of management within US companies, when compared with European companies. Over the last decade, however, it can be observed that both in the US and Europe, the emphasize on profits is becoming less important in favor of the market value orientation. From the point of view of financial theory this may be regarded as a step forward, since market value is more closely related to cash flows and the risk/return trade-off than the profit-approach¹. Based on the position of investors in the company, this market value approach resulted in a equity valuation orientation in the US and a company valuation orientation in Europe, although it can be observed that many internationally operating companies in Europe have shifted their focus towards the equity valuation orientation the last few years. This process from profit to market value is witnessed by the growing number of companies that include cash flow statements and shareholder value analysis in their financial annual report.

A direct result from the turn to a market value orientation was the increased importance of future cash flow analysis and the risk beared by these cash flows. Especially the relationship between market value and risk was a major concern that received a lot of attention in the academic literature, since knowledge about the identity and importance of risk factors would enable managers to increase the market value of the firm. One of the risk factors which gained a lot of attention in the academic literature was estimation risk. This risk factor bears on the differential information literature, which focuses on the differences in availability and reliability in information between companies. Since investors base their investment decisions on information, the pure existence of a lack in the availability and reliability of information leads to more risk concerning the future return distribution. However, the uncertainty with regard to the parameters of the future return distribution differs among companies as the availability and reliability of information is company specific. Therefore, differential

information leads to differential estimation risk. As this risk applies to every company it can not be simply diversified away by portfolio construction. To summarize, low availability and reliability of information leads to a higher estimation risk and, since estimation risk is a priced risk factor, to a higher expected return, resulting in a market value of equity which is below its optimum.

In light of the increased attention for market value, estimation risk should be managed by the management of the company. Despite the potential benefits of a well formulated investor relations program for the company's market value, the management of company is confined in the realization of it. The reason for this is that estimation risk is to some extent exogenous. For example, when a company belongs to the small caps it will usually gain less attention of institutions, the financial press and foreign investors, resulting in a relatively low information production. However, it should also be noticed that to some extent estimation risk is endogenous. For example, the accessibility of the annual report, contacts with the financial press and financial analysts and timely/regular information releases are all under the control of the management. The awareness that estimation risk is both priced and partly endogenous, added to a greater emphasize on market value, resulted in a growing number of companies that started to formulate and establish an investor relations policy.

Although the advantages of an IR-policy are straightforward on a theoretical basis, it is hard to measure its effects in practice. This measurement problem imposes a great deal of risk on the company's management, since the formulation and establishment of an IR-policy should always be preceded by a trade-off in terms of costs and potential benefits. In this paper we will try to explore the potential benefits of an IR-policy by examining the effects of differential information on the cost of equity, and therefore implicitly on the cost of capital. From that analysis we may deduct an indication of the potential effects of a structured information policy directed at (potential) investors of the company.

The structure of this paper is as follows. In section II we will briefly discuss the differential information concept. Here, we discuss the results of the anomaly studies. However, it should be mentioned that our focus is rather different from that in the anomaly studies. Our main concern is the relationship between a stock's expected return and instrumental IR-policy variables. In section III the data and research methodology are discussed, followed by the major results in section IV. The practical implications of the results for investors and companies will be dealt with in section V, after which we will end the paper with the major conclusions in section VI.

II Review of the literature

Klein and Bawa (1977) were among the first who showed that on a theoretical level differential information limits the portfolio diversification of an investor thereby boosting the market price of risk. Barry and Brown (1985) extended the Klein and Bawa result in a CAPM - context, and showed that differential information may affect the equilibrium price of any asset.

Empirical support for this theoretical concept came from the anomaly studies which appeared with a high frequency in the academic journals during the eighties. In these anomaly studies a lot of empirical regularities in stock markets were uncovered that contradict the joint hypothesis of an efficient market and the validity of a specific equilibrium asset pricing model (e.g. the CAPM and APT).

Among these empirical regularities are the January anomaly (Rozeff & Kinney, 1976), the Price-Earnings anomaly (Basu, 1977), the Size anomaly (Banz, 1981) and the Neglected Firm anomaly (Arbel & Strebel, 1982).

Rozeff & Kinney found that on average returns in January significantly higher than the monthly average in the rest of the year. Basu examined the return behavior for several P/E portfolios and reached the conclusion that on average low P/E stocks outperform high P/E stocks. In the same line of reasoning, Banz did examine whether a size factor would have additional explanatory power next to the CAPM-beta in a cross sectional analysis of stock returns. It appeared that a size factor did add explanatory power whereby the size premium was negatively related to the market capitalization of a stock. Finally, Arbel and Strebel found that returns on neglected stocks - neglect measured as the coefficient of variation in analysts' mean earnings forecast and the institutional holding in a specific stock - are on average higher than on 'brand name' stocks. More recent neglect studies in which other neglect proxies were used did reach similar results (e.g. Barry & Brown 1984, Jacobs & Levy 1988).

One explanation for the above mentioned anomalies is differential information. When we try to find a unifying factor among the different anomalies, we may observe the following: small cap stocks on average have a below-average price/earnings ratio; small caps with relative low p/e's are on average more neglected, and neglected, small cap companies that have relatively low p/e's are on average responsible for the above-average January returns. From this we may deduct the following answer to the question 'what do these anomaly-stocks have in common?': they all suffer from a below-average information production and a below-average attention of institutions, private investors and financial analysts. Since most anomaly studies started from an CAPM - context, which assumes perfect information structures, it may be the case that the observed return anomalies represent just an additional risk premium for bearing above-average estimation risk.

A major problem in testing the presence of priced estimation risk in stock returns is the construction of information variables. Since information is a multidimensional factor it can not be readily observed. Therefore we have to make use of information proxies. Some proxies that have been suggested in empirical tests include the period of listing (Barry & Brown, 1984), the degree to which analyst opinion varies across analysts for a given security (Barry & Brown, 1985 and Barry & Gültekin, 1992) and the number of analysts providing research on a security (Arbel & Strebel, 1982).

In the next section we will describe the methodology and data we have used in our tests. Our data, and especially our proxies, can be distinguished from other test since our focus is on estimation risk

factors that are endogeneous for the management, while at the same time we control for exogenous estimation risk factors that are heavily correlated with our endogeneous estimation risk factors.

III. Data and Research Methodology

We have made use of the IFS Database of the company IFS Financial Software & Consultancy B.V. which contains all relevant financial data, starting from 1957, of almost all companies quoted on the Amsterdam Stock Exchange (ASE) on a monthly basis². The dataset we used in this paper covers the periode 1968 - 1993 and consists of monthly total return observations of all companies listed on the Official Market of the ASE. This resulted in 44,452 valid observations. Also we selected eleven information proxies based on the empirical literature on stock market anomalies. These proxies can be divided in two groups: (exogeneous) control variables and (endogeneous) IR variables. Our focus is in the first place on the latter group of variables. The (exogeneous) control variables have been added to the analysis to get more efficient estimates with the regressions (as the control variables may be correlated with the IR variables) and to obtain a better understanding of the potential benefits of an IR policy. The variables used in the study are:

Control variables

- a. period of listing (POL);
- b. market capitalization (SIZE);
- c. relative market capitalization (SIZEREL);
- d. E/P ratio (E/P);
- e. E/P differential (EPDIF);
- f. stock turnover (TURN);
- g. relative stock turnover (TURNREL);
- h. dividend yield (YIELD)

IR variables

- i. beta/volatility ratio (BETAVOL);
- j. window dressing factor (SEAL);
- k. relative price volatility around the earnings announcement (VOLRAT);

The period of listing equals the length of time in years for which a security has been listed on the DSE and measures therefore the availability of historical price and return information. Size, Size Relative, E/P, E/P differential, Turnover, Relative Turnover and yield have been chosen for their relationship with endogeneous estimation risk (see e.g. Arbel, 1985) and play the role of controle

variable. Size Relative is calculated as the ratio size stock i /average size of the stocks quoted on the ASE. In this study E/P relative is defined the difference between a stock's E/P ratio and the E/P ratio of the sector. The E/P relative has been added to the list of explanatory variables, because earlier research made clear that E/P ratio's are highly sector dependent. If we want to use E/P as an information proxy, we must control for this sector influence³. The same applies to the dividend yield variable. Many studies have revealed a positive relationship between a stock's dividend yield and its total return (e.g. Litzenberger & Ramaswamy, 1977; Keim, 1985). Since we do not have any indication or prior knowledge concerning the correlation between yield and neglect we use the yield variable to account for potential links.

Stock turnover is motivated by the fact that information processing is usually induced by buy and sell transactions. In this line of reasoning low stock turnover signals a low rate of information processing resulting in a relative high estimation risk. Along the same line as the Size Relative, the Turnover Relative can be calculated as the ratio Turnover stock i /average turnover of the companies quoted on the ASE.

The beta/volatility ratio measures to what extent a stock is part of a well diversified portfolio. For stock i it is defined as:

$$BETAVOL_i = \frac{\beta_i \cdot \sigma_m}{\sigma_i} \quad (3.1)$$

with σ_m representing the volatility of the market portfolio. A high ratio means that the stock is traded by investors who relatively give much weight to beta as a risk factor, which only applies to portfolio investors. Usually this group is heavily represented by Institutional investors who only seek stocks of information-rich companies. Therefore, a low beta/volatility ratio indicates a firm with a relative high estimation risk.

The window dressing factor is defined as the difference between the average CAPM-residual in December and the average CAPM-residual in January, both measured over a five year period. We use CAPM-residuals instead of returns in order to control for differences in general market movements in December and January. The assumption behind this information proxy is that portfolio managers clean their portfolios at the end of the year leading to buy pressure for the blue chips and sell pressure for the small, neglected firms, which pattern is reversed in January. Therefore, stocks with relatively low returns in December and high returns in January can be considered neglect and therefore suffer from an above-average estimation risk.

The relative price volatility around the earnings announcement is defined as

$$VOLRAT = \frac{\sigma_{jv} - \sigma_t}{\sigma_t} \quad (3.2)$$

with σ_{jv} and σ_t being the stock's volatility in the period of the annual report release respectively over the total period; both volatilities on a monthly basis and calculated over a five year period. This variable focuses on the information value of the annual report. For companies with a good information policy (and a relatively low estimation risk) the annual report holds little surprises, whereas the annual report of a neglected firm may be full of it. A relatively high surprise level usually leads to a more than average price volatility around the announcement of the annual report.

The empirical tests to the practical relevance of investor relations for companies will be employed along two lines. First, we will perform some portfolio tests with the above mentioned information proxies as dimensions. Since portfolios are formed up to two dimensions and information proxies are correlated it is not possible from these portfolio tests to determine the importance of each information proxy. Therefore we also employed some multivariate regression tests in order to get an indication of the importance of each information proxy in explaining the cross sectional differences in returns and excess returns on individual stocks, thereby controlling for all other information proxies. The multivariate regression tests have been carried out in two ways: a) in a CAPM-framework, and b) within a non-equilibrium multifactor setting. In ex post form the CAPM can be described as follows:

$$R_i = R_f + \beta_i (R_m - R_f) + e_i \quad (3.3)$$

with:

- R_i = return on stock i
- R_f = return on a risk free asset
- R_m = return on the market portfolio
- β_i = beta-factor of stock i, $\text{Cov}(R_i, R_m) / \text{Var}(R_i)$
- e_i = residual return with $E(e_i) = 0$ and $\text{Var}(e_i) = x$

Since in a CAPM-framework a stock's return is only related to its beta, priced estimation risk factors may show up in the residual returns. Therefore, in the multivariate regression tests we focused on the CAPM-residuals by regressing them on the above mentioned information proxies. If estimation

risk is priced and our information variables are good proxies, we should find some significant relationships. However, there are at least two reasons which support the use of a non-equilibrium multifactor model (in which beta is just one of many variables) over the CAPM. Firstly, many studies which have been carried out lately do seriously doubt the validity of the CAPM in explaining cross-sectional differences in returns (e.g. Fama & French, 1992). Starting with the CAPM-residuals implicitly assumes that the CAPM is correct. Secondly, under differential information observed beta's may be biased due to differential estimation risk (Barry & Brown, 1985).

Both in the CAPM framework and the non-equilibrium multifactor setting we substituted a 60-months adjusted beta for the historical 60-months OLS beta. The adjusted beta is the weighted average of the 60-months historical beta of the stock and the 60-months industry beta⁴. The weights are the respective variances of the two beta estimates. They are used in such a way that a larger variance of the one implies a larger weight for the other beta, that is:

$$\beta_{adj} = \frac{\sigma^2(\beta_{i,h})}{\sigma^2(\beta_{i,h}) + \sigma^2(\beta_s)} \beta_s + \frac{\sigma^2(\beta_s)}{\sigma^2(\beta_{i,h}) + \sigma^2(\beta_s)} \beta_{i,h} \quad (3.4)$$

with:

$\sigma^2(\beta_{i,h})$ = variance of the 60-month historical beta of stock i

$\sigma^2(\beta_s)$ = variance of the 60-month historical beta of industry s

$\beta_{i,h}, \beta_s$ = 60-month historical beta of stock i and industry s

The motivation for this adjustment is that previous research showed that the cyclical patterns in beta witnessed in the Netherlands, resulted in an explanatory power of the standard OLS-beta close to zero⁵. This 'mean reversion' phenomenon shows a certain resemblance with the well-known seven/eight years business cycle, although the beta cycles seem to be somewhat shorter on average.

As a result of the two test frameworks described above, we have two regression models which need to be estimated:

$$\varepsilon_{i,t} = \gamma_0 + \sum_{j=1}^{11} \gamma_j \cdot I_{i,j,t} + \xi_{i,t} \quad (3.5A)$$

$$R_{i,t} = \alpha_0 + \alpha_1 \cdot \beta_{i,t} + \sum_{j=2}^{12} \alpha_j \cdot I_{i,j,t} + u_{i,t} \quad (3.5B)$$

with:

- $\varepsilon_{i,t}$ = CAPM residual of stock i in period t
 $\gamma_0, \gamma_j, \alpha_0, \alpha_j$ = regression coefficients
 $I_{i,j,t}$ = information proxy j of stock i in period t
 $\xi_{i,t}, v_{i,t}$ = residual term with $E(\cdot) = 0$ and $\text{Var}(\cdot) = x$
 $R_{i,t}$ = return of stock i in month t
 $\beta_{i,t}$ = adjusted beta of stock i in month t

IV. Results

Before we did perform the regression tests, we constructed some portfolios to obtain a first impression of the relationship between our IR variables and stock returns. With these portfolio tests we controlled for size, since that appeared to be the most important control variable.

Table 1 shows the monthly returns of some size-matched BETAVOL-portfolios⁶. It appears that return differences between BVR-portfolios is more pronounced than the returns differences of the size categories. Stated otherwise, improving on BETAVOL within a specific size category seems to be more interesting than getting bigger within a specific BETAVOL category.

Table 1: Monthly average returns for size-matched BETAVOL portfolios, 1968 - 1993.

Note: Portfolio S1/B1 contains the smallest stocks with the lowest BETAVOL value and portfolio S5/B5 contains the largest stocks with the biggest BETAVOL value.

	B1	B2	B3	B4	B5	B TOT
S1	.006	.002	.000	.004	.004	.003
S2	.017	.013	.012	.010	.004	.012
S3	.023	.013	.011	.011	.008	.012
S4	.020	.013	.011	.015	.011	.013
S5	.016	.011	.012	.011	.009	.011
S TOT	.014	.009	.009	.011	.008	.010

Another remarkable result that follows from table 1 is the performance of the first size quintile (the smallest companies), since these companies have the lowest returns. An possible explanation for this is probably the fact that these stocks are held by a small number of investors, including the management of the company, who seldom trade their stocks. As this small group of investors is usually very well informed these small stocks can be very risky for the average investor. So, the low returns should not be interpreted as a reflection of a below-average risk profile.

Table 2 and 3 report the monthly returns of respectively the size-matched VOLRAT and the size-matched SEAL portfolios. From both tables we can deduct similar conclusions as from table 1. The returns differences between both the VOLRAT and the SEAL portfolios seem to be more obvious than those between the size portfolios. From inspection of the second and sixth column of the tables 1, 2 and 3 we may deduct the conclusion that both BETAVOL and VOLRAT are gradually more important on average than SEAL, although the return differences between B1/B5, V1/V5 and SE1/SE5 are all worth realizing from an economic point of view.

Table 2: The monthly average returns of the size-matched VOLRAT portfolios, 1968 - 1993.
Note: the V1/S1 portfolio contains the smallest stocks with the smallest volatility ratio, and the V5/S5 portfolio contains the largest stocks with the biggest volatility ratios.

	V1	V2	V3	V4	V5	V TOT
S1	.001	.003	-.001	.002	.009	.003
S2	.009	.005	.009	.013	.021	.012
S3	.009	.009	.013	.014	.017	.012
S4	.010	.015	.013	.010	.019	.013
S5	.011	.008	.010	.012	.015	.011
S TOT	.008	.008	.009	.010	.016	.010

Table 3: The monthly average returns of the size-matched SEAL portfolios, 1968 - 1993.
Note: the SE1/S1 portfolio contains the smallest stocks with the smallest SEAL values, and portfolio SE5/S5 contains the largest stocks with the biggest SEAL values.

	SE1	SE2	SE3	SE4	SE5	B TOT
S1	-.007	.008	.002	.002	.013	.003
S2	.011	.011	.014	.014	.017	.012
S3	.013	.011	.013	.009	.019	.012
S4	.014	.003	.011	.016	.018	.013
S5	.011	.001	.013	.011	.013	.011
S TOT	.009	.007	.011	.010	.016	.010

From the foregoing analysis it is not possible to determine the specific importance of the IR variables separately. Firstly, the three IR variables we use in our test may be correlated leading to similar results in the portfolio tests. Secondly, both BETAVOL, VOLRAT and SEAL may be correlated to some omitted variables that are exogeneous from the point of view of the management, thereby overstating the benefits of an IR policy.

To deal with these problems we employed some multivariate regression tests with the information related variables described in section III. As mentioned in section III we can use two model specifications to test the significance of the IR variables: the CAPM related framework (eq. 3.5A) and the non-equilibrium multifactor framework (eq. 3.5B). Table 4 reports the results of both models. Although the coefficients of the statistically significant variables in both regression frameworks have the expected sign, the non-equilibrium multifactor framework performs better than the CAPM framework, which is indicated by the better R^2 and t-values. Both regression do not suffer from autocorrelation patterns in the residuals since the DW-statistic is close to two. However, inspection of the residual plots reveals a severe heteroskedasticity problem, leading to inefficient estimators in the regression equations. To deal with the volatility clustering in the residuals we also employed some WLS regressions⁷. Since the non-equilibrium multifactor framework did perform better than the CAPM framework, we only used the monthly return as regressand (see eq. 3.5B). To control for potential 'error in the variables' disturbances we employed the WLS regressions both on the individual stock level and the portfolio level, using size sorted portfolios in the latter case.

Table 4: The relation between information related proxies and return/CAPM-residual, 1968-1993; t-statistics between brackets.

$$\varepsilon_{i,t} = \gamma_0 + \sum_{j=1}^{11} \gamma_j \cdot I_{i,j,t} + \xi_{i,t} \quad (3.5A)$$

$$R_{i,t} = \alpha_0 + \alpha_1 \cdot \beta_{i,t} + \sum_{j=2}^{12} \alpha_j \cdot I_{i,j,t} + v_{i,t} \quad (3.5B)$$

INFORMATION PROXY	CAPM-RESIDUAL	RETURN
CONSTANT	-0,005 (-3,03)	-0,023 (-7,32)
SIZE	0,012 (11,95)	0,025 (21,27)
SIZEREL	-0,003 (-0,98)	-0,025 (-6,57)
TURN	-0,007 (-6,98)	-0,017 (-14,18)
TURNREL	-0,011 (-2,10)	0,005 (0,86)
E/P	3,058 E-04 (0,65)	0,001 (3,66)
EPDIF	-4,624 E-04 (0,96)	-0,002 (-3,81)
YIELD	0,042 (5,26)	0,062 (6,98)
POL	1,044 E-04 (0,62)	3,90 E-05 (2,06)
BETA	—	0,033 (12,06)
BETAVOL	-0,017 (-5,55)	-0,035 (12,06)
VOLRAT	0,013 (6,40)	0,018 (8,00)
SEAL	0,050 (6,20)	0,041 (5,91)
DW-STATISTIC	2,09	1,95
R ²	0,015	0,026

Table 5 reports the results of the WLS regressions on individual stock level. As we can see, all three IR variables are significant on the 1%-level, even after controlling for many exogeneous information related variables. To save space we only report the variables that are statistically significant. Similar as in the portfolio analysis BETAVOL and VOLRAT perform slightly better than SEAL. This would mean that enlarging the number of institutional investors and upgrading (in terms of more regular and timely) the information policy should be the major concern for the IR manager.

Table 5: Results of the WLS regression of return on several information proxies, 1968-1993; individual stock level

VARIABLE	COEFFICIENT	T-VALUE
CONSTANT	-.0222	-7.366
SIZE	.0243	30.884
SIZEREL	-.0230	-14.453
VASI	.0333	12.560
BETAVOL	-.0440	-11.552
VOLRATIO	.0172	7.623
YIELD	.0611	6.645
SEAL	.0320	4.741
EPRAT	.0019	3.442
EPRELSEC	-.0020	-3.549
POL	4.610 E-05	2.540
TURN	-.0165	-30.930

The results of the WLS regressions on the size sorted portfolios are reported in table 6. Since portfolio formation implies a substantial reduction in observations it is not surprising that all t-statistics are lower than those reported in table 5. As a results our IR variable SEAL is no longer significant. However, our IR variables BETAVOL and VOLRAT are still 'alive and kicking' on the 5%-level. At first glance, taking account of the reduction in observations, it seems that table 5 and 6 do not differ very much, implying that there is no severe 'error in the variables' problem.

Table 6: Results of the WLS regressions of stock return on several information proxies; 1968-1993; size sorted portfolios

VARIABLES	COEFFICIENT	T-VALUE
CONSTANT	-.0458	-3.351
SIZE	.0329	11.306
SIZEREL	-.0258	-6.811
TURN	-.0231	-10.443
VASI	.0774	5.388
EPRAT	.0085	3.095
EPRATSEC	-.0080	-2.493
BETAVOL	-.0906	-4.043
VOLRATIO	.0385	2.946

To summarize, when taking account of heteroskedasticity and potential 'error in the variables' disturbances, together with a potential correlation between the IR variables and some exogeneous information related variables, it appears that our IR variables could explain a statistical significant portion of the cross sectional differences in stock returns, though the SEAL variable dropped from the list in the WLS regressions on size sorted portfolios.

V. Practical Implications

It follows from section IV that our IR variables BETAVOL, VOLRAT and SEAL can be considered priced risk factors which explain a statistical significant portion of cross sectional differences in returns. However, that information is not sufficient to support some kind of IR policy. As we mentioned in the beginning of this paper every decision concerning the formulation and establishment of an IR policy should be preceeded by an cost-benefit trade-off. This implies that we have to express the potential benefits in terms of returns or cash. For that purpose we will use the portfolio analysis we started with in section IV. Holding the size category constant, we will calculate the potential reduction in expected returns from a shift from B1/V5/SE5 towards B5/V1/SE1. Before we can calculate the total effect we have to make certain assumptions concerning the correlation between the three IR variables. When we assume that the three variables are uncorrelated, we can calculate the total benefit by summing the three separate effects. However, such an approach would

give in overstatement of the total effect in case the IR variables are correlated. Over the period 1968 - 1993 we find that the correlation between the IR variables is on average 0.02. Though that would support the summation of the three separate effects, we have - based on conservatism and caution - calculated the total benefit as the average of the three separate effect. This yields the following results:

Size category	Reduction in expected monthly return
S1	0.40
S2	1.03
S3	1.16
S4	0.73
S5	0.43

Transforming the benefits to an annual return, the reduction in expected returns due to IR ranges from 5% (S1) to 14% (S3). We may assume that in light of these benefits an IR policy yields a net benefit for almost every company. Moreover, one has to bear in mind that a well formulated IR policy has more instrumental variables than we have been able to adress in this study. Seen in this perspective our results may even understate the potential benefits of an IR policy.

VI. Summary and concluding remarks

In this paper we have analysed the potential benefits of an well formulated and established IR policy. For that purpose we did construct three IR related proxies: the beta/volatility ratio, the volatility around the release of the annual report related to the volatility over the total period, and the sensitivity of a stock to window dressing activities of institutions.

From the regressions it followed that these IR proxies could be interpreted as priced risk factors that explain a statistical significant portion of cross sectional differences in returns. Even after controlling for exogeneous information related variables this notion is unaffected.

Finally, we tried to calculate the potential benefit of an IR policy in terms of a reduction in expected returns. Conservative estimates ranged from 5% to 14%, which means that it is hard to find an company for which IR is not worth the effort. However, still has to be done yet. It would be an interesting topic for future research to create and test a wider range of IR proxies. Another interesting area for future research would be the examination of the effectiveness of an IR policy in bullish and bearish markets. Based on psychological and sociological studies it is possible that investors are more sensitive to a company's IR in a bearish market than in a bullish market. All this information can guide an IR manager in the formulation and establishment of his policy.

Notes:

1. This step forward is very small however. Five hundred years ago Luca Pacioli wrote in his Summa that: '(1) The most important of these is cash or any equivalent...(2)...to be a good bookkeeper and ready mathematician...(3)...to arrange all the transactions in such a systematic way that one may understand each of them at a glance. (see Vis & Dorsman, 1994). In whole his Summa he didn't use the word profit or something in that direction.
2. Among these financial data are stock prices, dividends, stock splits, offerings and financial accounting data.
3. Although it must be stated that, for example, low sector P/E's could also indicate that something is wrong with the IR in this specific sector. But momentarily, without any indications in this direction, this seems unlikely. Anyhow, the fact that 'E/P absolute' is not dropped from our framework after the introduction of the 'E/P relative', should take account of this possibility.
4. The beta-adjustment method chosen in this paper can be regarded as a modification of the beta-adaption technique suggested by Vasicek (1973).
5. Van Dijk and De Ruiter, Unpublished research paper, IFS, 1991.
6. It appeared that the probability distributions of all IR variables could be well approximated by a normal distribution. We used this approximation to construct our portfolios, by dividing the probability distributions of the IR variables in five equally spaced (in density terms) parts. In our portfolio tests each part represents a portfolio.
7. Additional analysis revealed that the heteroskedasticity in the residuals was caused by the size factor and a monthly return pattern.

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