

Relationship between Information Quality and Expected Earning Price Ratio: an Empirical Test*

GIUSEPPE SANCETTA**

Abstract

The aim of the paper is to investigate the relationship between information quality and expected earning price ratio.

According to our approach, information quality is a very relevant intangible asset related to the management's ability to meet the information requirements of the players involved in a company's income and financial dynamics. Financial analysts are particularly important in this framework. Therefore, we identified an indicator to define the quality of the information disclosed to analysts. At a later moment, we verified the existence of a correlation between that indicator and the expected earning price ratio.

Our research hypothesis seems to have found empirical evidence. We should also consider the importance of the results for the management. In fact, if the management's ability to provide analysts with accurate information favours a lower expected earning price ratio, the management will need to check regularly the level and quality of the information disclosed.

Key words: Information, Financial Super System, Earning, Risk

1. Introduction

The process of accumulation and renovation of intangible assets has a significant impact on a company's prospective performance and, hence, its financial value. With reference in particular to value, without analysing in detail the various aspects of this concept and the relevant calculation methods, it should be noted that the financial value of a company depends basically on three variables:

- the expected flows it is capable of generating;
- the changes of such flows in time;
- the degree of risk associated to the flows.

* Paper presented at the 2nd Workshop on Visualizing, Measuring and Managing Intangibles and Intellectual Capital held in Maastricht, The Netherlands, October 25-27, 2006.

** Associate Professor of Business Management - Department of Management Sciences University of Rome "La Sapienza"
e mail: giuseppe.sancetta@uniroma1.it

Having said that, the purpose of this paper is to verify the relationship between information quality and expected earning price ratio that derive from the risk associated to flows and from the variation of flows over time.

In fact, assuming that future results may be expressed in the form of constant earnings based on a Gordon growth model, the following equation is true (Guatri, Bini, 2005):

$$P_0 = \frac{E_1}{r-g}$$

where:

P_0 is the share price

E_1 is the expected earning per share

r is the discount rate

g is the earning growth rate

Therefore, the discount rate is:

$$r = \frac{E_1}{P_0} + g$$

And the expected earning price ratio is:

$$\frac{E_1}{P_0} = r - g$$

For the purposes of this paper, it should be noted that several studies have analysed the relationship between level of disclosure and cost of capital. While most of these have evidenced a negative association between the two variables (Botosan, 1997; Botosan, Plumee, 2004; Botosan, 2006; Diamond, Verrecchia, 1991; Gelb, Strawser, 2004; Francis, Khurana, Pereira, 2005; Giertzmann, Ireland, 2005; Hail 2002; Sengupta, 1998), according to other empirical evidence the correlation between the two variables may be either positive or negative (Guochang, 2001)¹.

¹ On this issue, see also ASHTON D., "Discussion of Cost of Capital, Strategic Disclosure and Accounting Choice", *Journal of Business Finance & Accounting*, April/May 2005, Vol. 32, Issue3/4; BAIMAN S., VERRECCHIA R., "The Relation among Capital Markets, Financial Disclosure, Production Efficiency and Insider Trading", *Journal of Accounting Research*, Spring, 1996, Vol. 34, Issue 1; BECCALLI E., MILLER P., O'LEARY T., "Informazioni non finanziarie e disclosure tecnica nelle previsioni degli

According to our approach, information quality is a very relevant intangible asset related to the management's ability to meet the information requirements of the players involved in a company's income and financial dynamics². Financial analysts are particularly important in this framework. Therefore, an indicator must be identified to define the quality of the information disclosed to analysts. At a later moment, the existence of a correlation between that indicator and the expected earning price ratio must be verified. Due to this reason, our analysis refers to listed companies.

In our analysis, what is relevant in the disclosure process is not so much the quantity of information and news disclosed as the management's ability to convey information capable of facilitating a certain homogeneity in the financial analysts' forecasts.

As to the structure of our research, we will first comment on the role of financial information and on the impact of information asymmetry. Then we will outline our research hypothesis and describe our information collection and work methodologies, as well as the conclusions reached.

2. Corporate financial and economic information

1. Financial and economic information comprise the whole of information disclosed to the operators within the financial super-system³. In other words, owners of capital and persons playing a role in economic and financial processes or having

analisti finanziari. Il caso Intel Corp", *Banche e Banchieri* n. 5/2006; BLOOMFIELD R.J., WILKS T.J., "Disclosure Effect in the Laboratory: Liquidity Depth and the Cost of Capital", *Accounting Review*, January 2000, Vol. 75 Issue 1; COOPER S., "Discussion of Disclosure and the Cost of Capital: what do we know?", *Accounting & Business Research*, 2006, Special Issue, Vol. 36; HEALY P., HUTTON A., PALEPU K., "Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure", *Contemporary Accounting Research*, Fall 1999, Vol. 16, Issue 3; LEUZ C., VERRECCHIA R.E., "The Economic Consequences of Increased Disclosure", *Journal of Accounting Research*, 2000, Supplement, Vol. 38, Issue 3; MARQUADT C., WIEDMAN C., "Voluntary Disclosure, Information Asymmetry and Insider Selling through Secondary Equity Offerings", *Contemporary Accounting Research*, Winter 1998, Vol. 15, Issue 4; WELKER M., "Disclosure Policy, Information Asymmetry and Liquidity in Equity Markets", *Contemporary Accounting Research*, Spring 1995, Vol. 11, Issue 2.0.

² If we used the typical classification of North-European studies on intellectual capital (human capital, organisational capital, relational capital), we might include the management's ability to maximise the relationships with analysts in the category of relational capital.

³ About the relationships between companies and the financial super-system, see GOLINELLI G.M., *L'approccio sistemico al governo dell'impresa. La dinamica evolutiva del sistema impresa tra economia e finanza*, Vol. II, Cedam, Padova, 2000, chapt. X.

an interest in establishing relationships or in knowing their contents. The relationships with the diverse components of the financial super-system are particularly important for companies listed on a stock exchange. In fact, by issuing financial statements, presentations to financial analysis and other forms of information, companies may improve their reputation, increase investor consensus and preference. It is worth noting, on the other hand, that companies provide financial information both voluntarily and by requirement of law; and therefore voluntary information may be viewed separately from mandatory information.

The importance of corporate financial information is related to the importance and the role of information asymmetry in financial markets, which derives from the fact that operators within a company have access to private information that are not available to other operators, that may only access to the information disclosed by a company or by specialised organisations.

In fact, according to a study that dates back to the late 1960's, financial markets may be characterised by three levels of efficiency:

- the strong form, where prices reflect all public and private information available, including market forecasts. In this situation no additional return may be obtained from exploiting information advantages and therefore no portfolio owner capable of obtaining significant better-than-market results can be identified;
- the semi-strong form, where prices reflect the information available to the generality of operators. These are in particular information and news that can be obtained from reading annual reports, dividend announcements, profit forecasts, changes in accounting standards applied and past prices. In this situation, publicly available information do not allow investors to obtain additional returns;
- the weak form, where prices reflect historical information or past price information. In this case, past securities prices do not allow to obtain additional returns, while any other information, available or re-processed, may turn out to be useful (Roberts, 1967)⁴.

Speaking of the efficient market hypothesis, the Grossmann - Stiglitz paradox is interesting (Grossmann, Stiglitz, 1980). In particular, according to the authors' position, in order to offset the costs of obtaining information investors should have sufficient incentives to earn returns above average market returns. If the market were efficient, additional returns would not be available and, as a consequence, no-one would be encouraged to seek information and prices would follow a random trend based on the diffusion of information on the market. However, each investor would be encouraged to consume resources in order to obtain information.

In addition to the considerations above, it should be noted that actual financial market trends show that information is not immediately available and exogenous.

⁴ Worth of mention on this topic are, among many others, FAMA E.F., "Efficient Capital Markets: A Review of Theory and Empirical Work", *Journal of Finance*, Vol. 25, May 1970; FAMA E.F., "Efficient Capital Markets: II", *Journal of Finance*, Vol. 46, December 1991.

Besides, although few operators have privileged information and news, there are many who - thanks to their experience - can process publicly available information better than others. In other words, information asymmetries are not solely due to different degrees of information availability but also to each individuals' different ability to process and interpret the information available. As long as not all useful information and news are available on the market, different operators do not have the same level of access to relevant information, i.e. those capable of affecting the risk/return ratio. Those who have a more complete and articulated set of information are advantaged, because if the relevant piece of information is disseminated in the market, it may change the risk/return ratio for a financial asset with positive consequences for the person who was aware of it (Jensen, 1968). Therefore, information processing abilities or the availability of additional information have a significant value. Those who master a greater level of information choose financial assets before prices absorb completely the effects of the information in their possession obtaining greater returns than the ones normally offered by the market. These operators tend to incur information research and processing costs insofar as these costs are lower than the greater earnings obtainable from these activities. The alternative is disseminating the information to the public. However, as information gathering and processing activities have a cost, no one would be willing to disclose those information to the market. Therefore, the information and news in question may be transferred when the more informed operators receive a compensation in exchange, that will depend, on one hand, on the additional return they choose to do without by disclosing the information and, on the other, on the cost incurred to obtain such information. In other words, in a weak and semi-strong EMH condition, information transfer is not immediate nor free of charge. On the contrary, in a strong EMH condition, as the information transfer would be immediate and free of charge, seeking and processing information would not be profitable for any operator, and there would be no information available on the market.

2. The phenomenon of information asymmetry among company operators and external investors derives from the conflict of interest that is typical of the principal-agent theory (Jensen, Meckling, 1976). The conflict arises when not all investors play an active role: in this situation, non-company operators may be disadvantaged compared to company operators who have more information available.

In order to avoid that information asymmetry may cause a disadvantage to external investors, the economic literature has identified a series of tools aimed at minimising its impact.

In the first place, the relationships between agent and principal can be governed by agreements where the interest of company managers are aligned with those of investors and lenders. These agreements usually provide for incentives to the complete disclosure of proprietary information available to company operators so as to minimise the consequences of an incorrect valuation of business initiatives. Of course, due to limited rationality, the agreements are incomplete and cannot define and govern all possible circumstances *ex ante*.

Another tool that may be used to minimise the conflicts between agent and principal is a board of directors composed of independent directors who supervise the top management's activities on behalf of external shareholders. In other words, here conflicts may be mitigated by implementing an appropriate corporate governance structure.

Another method is to regulate the quantity and type of information disclosed to the market. Market control authorities establish a series of mandatory rules that business organisations must comply with. Therefore, the surveillance and control implemented by means of far-reaching and articulated rules require top managers to disclose proprietary information to the financial super-structure so that operators may make reasonably informed decisions. However, mandatory information do not always succeed in meeting the knowledge requirements of non-company operators. Therefore there are, on one hand, specialised operators acting as financial brokers whose task is to further reduce information asymmetry and, on the other, companies tending to disclose voluntarily information, in addition to the information they are required to disclose.

Another element that affects the level of information asymmetry lies in market operation mechanisms and in particular in certain economic and institutional factors such as: the ability to have agreements performed, that induces operators possessing proprietary information to disclose them; the efficacy of corporate governance rules; the existence of special interests leading brokers to restrain external disclosure; the opportunity to oppose to corporate governance, that encourages management behaviours oriented to meeting shareholder requirements.

These considerations show that the role of financial information takes particular relevance whenever there is a high level of information asymmetry. In other words, there seems to be a direct correlation between market inefficiency and the role of financial information in determining investment choices: the lower the market efficiency, the greater the value of information⁵. In particular, investors tend to seek information and news according to the companies' business model, growth prospects and methodology of production, organisational and marketing processes.

Information asymmetry may have extremely negative consequences. If investors are not sufficiently informed, they may choose wrong investment options. It may be hard to distinguish between highly attractive business initiatives and scarcely profitable ones.

⁵ Many studies have analysed the relationship between information and cost of capital. Among these a recent paper by EASLEY D., O'HARA M., "Information and the Cost of Capital", *Journal of Finance*, Vol. 59, August 2004, that investigates the impact of information on the cost of capital. In particular, the essay shows that investors demand a greater revenue from companies characterised by a high level of proprietary information. With reference instead to cost of capital in particular, viewed apart from its connections with information, the remarkable study by COLOMBI F., *Finanza condizionata e teoria del valore*, Aracne, Roma, 2003 is certainly worth of mention.

3. After this brief overview of information asymmetry, we will review the characteristics of financial information in the present environment.

While the role of capital market plays an increasingly important role in the mobilisation of the companies' financial needs, economic and financial documents become particularly critical. Besides, these documents tend to be mostly audit-oriented (Giuliani, 2006), which means that the knowledge requirements of the financial super-system are not so much met through the generation and dissemination of period balance figures, but mainly through budgetary information. In fact, as the environment is undergoing major changes, the reference to year-end information can give little explanation: the achievement of positive performances does not guarantee future sustainability and a company's competitive edge derives from its ability to accumulate and renew intangible intellectual resources and assets rather than the possession of tangible and financial assets. Nevertheless, the year-end information contained in conventional financial statements are not enough to comprise the process of accumulation/destruction of a company's intangible assets. Since budgetary information cannot be determined by mere extrapolation from past figures, the quality of information about a company's future financial dynamics becomes particularly important. In fact, these information are particularly important for determining share prices and therefore for the companies' potential and financing costs. In order to maximise the relationships with the financial super-system, the companies listed on stock exchange usually have an Investor Relations Department, that reports either to the CFO or to the top management. This department - with financial, management expertise coupled with marketing and relational expertise - is in charge of managing relationships with the investors and with all the players in the financial super-structure in general. These are in particular financial analysts, investment fund managers, specialised journalists and other operators having a specific interest in the stock price trends. It should be noted that, in order to cope with the requests for greater transparency from the market, the leading manufacturing companies in the United States have created the position of Investor Relation Manager already in the 1950's⁶. The National Institute of Investor Relations was established later, in 1969.

The information disclosed by business organisations may be classified into:

- mandatory information, required by the law or by regulations issued by the controlling authorities or similar;
- voluntary information.

⁶ The pioneer Investor Relations Department was created in 1952 by General Electric. See RENZETTI M., TAMAROWSKI C., "La comunicazione finanziaria quale fattore di successo", *Economia e Management* n. 2/2000. With regard to Investor Relations issues, see also CORVI E., *Comunicazione d'impresa e Investor Relation. La gestione della comunicazione economico-finanziaria*, Egea, Milano, 2000, and MAZZOLA P., *Le investor relations*, Egea, Milano, 2006.

The disclosure of mandatory information is of course necessary but not sufficient to develop favourable relations with the financial super-system. In other words, there is a minimum level of communication that must necessarily be achieved. Vice versa, voluntary information is not required by the Government or by an Authority, it is disclosed in order to meet the growing knowledge requirements of the players interested in stock price trends. Therefore, companies tend to increase their opportunity to make contacts with market operators by means of analyst meetings, road shows, press releases, presentations, interviews for newspapers and specialised TV networks⁷. Actually, in a financial system where the gap between a company's intrinsic value and its market value is apparently widening, the ability to generate significant information is particularly important. Two factors count here: the alignment of market expectations with corporate performances; the companies' ability to generate information capable of guiding correctly the analysts' forecasts.

Based on the considerations above, it must be said that financial documents have gained an essential role for business organisations in the present economic scenario. According to a research published in the late Nineties, an adequate investor relations activity can increase the number of financial analysts interested in a company's economic and financial dynamics and the level of consensus towards that company. Furthermore, accurate information will mitigate information asymmetry and reduce the liquidity premium. Last but not least, an efficacious information exchange with the market can encourage a reduction in capital cost and an increase in share price (Brennan, Tamarowski, 1999).

3. The research hypothesis

As stated in the introduction, the purpose of this section is to verify the correlation between the management's ability to disclose qualitatively adequate information and the consequences in terms of expected earning price ratio. In other words, our intention is to verify the financial effect of the management's ability to develop adequate relationships with the financial super-system and with financial analysts in particular. We refer to financial analysts because they play a significant role in guiding investor decisions.

According to the assumptions of the theory, disclosure is inversely correlated to cost of capital. In fact, less external communications increase information asymmetry, uncertainty, and hence the return expected by investors in exchange for the greater risk perceived.

In our perspective, it is not so much information quantity rather than information quality that is important. In other words, we feel that the management's ability to

⁷ In this framework the growing importance of the Internet in financial communication processes should be kept in mind. See for an insight, among others, QUAGLI A., TEODORI C. (a cura di), *I siti web e la comunicazione ai mercati finanziari. Gli strumenti e gli intermediari*, Franco Angeli, Milano, 2005.

maximise the relationships with the financial super-system from the point of view of information cannot be measured solely by quantitative parameters such as, for instance, the number of indicators disclosed. On the contrary, we are led to think that the qualitative aspect of information is what affects the perceptions of the operators interested in a company's economic and financial trends.

According to the considerations above, we may formulate our next research hypothesis.

H1

The management's ability to improve the quality of external information favours a reduction in the expected earning price ratio.

4. The methodology used

In order to verify our research hypothesis, we considered a sample of listed companies. In particular, our base is composed of companies in the EuroStoxx 50 index, that includes the top fifty companies listed in the Euro area by level of capitalisation, as shown in the table below. In our opinion, this sample is reasonably significant.

We have considered a period of time between 2001 and 2006, due to the fact that we believed the prices reached at the end of the 1990's were too high and might have adversely affected the significance of our analysis.

We have obtained the following information for the purpose of our analysis:

- a) consensus of the various analysts about the EPS of each security for the following year⁸;
- b) arithmetic mean of the consensus as per letter a) above per security and per year;
- c) standard deviation between the consensus as per letter a) and the mean values as per letter b);
- d) security prices as of the date on which the consensus was collected⁹.

We determined the quality of management-disclosed information by considering, in the first place, the information as per letter c) above, i.e. the standard deviation of the consensus given by analysts on expected EPS. It is worth noting that our valuation was a dynamic one, as we have verified the degree of correlation between improvement of information quality and variation of expected return.

Reference values:

⁸ Reassuring, these are data on EPS consensus released at the end of year 0 for the year 1. In this particular case we started from consensus information released at year-end 2000 and pertaining to 2001, and so on.

⁹ The source of information is IBES/Datastream.

- $E_{i,t}$ is the mean of consensus on EPS given by analysts for security i in year t ;
- $\sigma_{i,t}$ is the standard deviation of the EPS forecasts made by analysts for security i as of year t .

The variable that defines the improvement or worsening of information quality is defined as $X_{i,t}$, where i is the security and t is the reference year, and is obtained as follows:

$$X_{i,t} = \frac{\sigma_{i,t} - \sigma_{i,t-1}}{\sigma_{i,t-1}}$$

Other reference values:

- $P_{i,t-1}$ is the price of security i at the end of the year $t-1$ when the forecasts for year t are collected;
- $\bar{E}_{i,t}$ is the expected return for security i and year t at the end of the year $t-1$.

The variable that defines the increase or reduction in the expected return, for reasons of standardisation with $X_{i,t}$ is obtained as follows:

$$Y_{i,t} = \frac{\bar{E}_{i,t}/P_{i,t-1} - \bar{E}_{i,t-1}/P_{i,t-2}}{\bar{E}_{i,t-1}/P_{i,t-2}}$$

It should also be noted that our list of companies in the Eurostoxx 50 did not include Alcatel, Credit Agricole and Telecom because useful data for our analysis were not always available.

5. Results

After outlining our hypothesis and defining the methods used to collect data and measure the analysed phenomena, we may present the results of our empirical test in order to assess the correlation between the variables.

Table 1: Correlation coefficient throughout years

	2002	2003	2004	2005	2006
Correlation coefficient (R)	0.088	0.2818	0.0764	0.2594	0.1422
Pooled Correlation 2002-2006 (R_p)	0.1697				

Source: our processing

The average value of the correlation coefficient in the 2002-2006 period is 0.1697 (Pooled Correlation).

These results are moderately interesting because:

- for every year there is a correlation between the reduction or increase of analyst consensus variability and the reduction or increase of the expected earning price ratio;
- the correlation coefficient between variables is relatively strong;
- the time horizon considered appears to be sufficiently wide with respect to the purpose of the analysis;
- the sample size is relatively large;
- the type of companies is appropriately chosen.

Moreover, we tested to see if the results are statistically significant. Under the assumption of no correlation, $n^{1/2}R_p$ is asymptotically distributed as a standard normal random variable¹⁰.

The null hypothesis is $R_p = 0$. The alternative hypothesis is $R_p > 0$.

Using the pooled estimator R_p we found out the following.

Table 2: Test results

R_p	0.1697
$n^{1/2}$	15.329
Standard normal critical value at 1% significance level	2.33
$n^{1/2}R_p$	2.6013

Source: our processing

The test statistic $n^{1/2}R_p$ is greater than 2.33, hence we reject the null of no correlation at the 1% level of significance. In conclusion, our research hypothesis seems to have found empirical evidence.

We should also consider the importance of the results for the management. In

¹⁰ We define "n" the number of the observations which is $47 \times 5 = 235$ where 47 is the number of securities considered and 5 the number of the years. We are assuming no time and cross sectional correlation.

If we assumed a perfect time correlation, n would be 47. The Standard normal critical value at the 15% significance level is 1,036; in this situation $n^{1/2}R_p$ would be 1,635 so we could reject the null of no correlation at the 15% level of significance.

fact, if the management's ability to provide analysts with accurate information favours a lower expected earning price ratio, the management will need to check regularly the level and quality of the information disclosed. This stresses the importance of the Investor Relations Department in modern businesses listed in the stock market, the one that actually develops contacts with the financial analysts belonging to the financial super-structure and that may actually contribute to mitigating uncertainty, perception of risk and, in brief, expected return. If a company management can start a virtuous cycle thanks to which information quality can encourage the convergence of analyst forecasts and this in turn reflects in a gradual reduction in the expected earning price ratio that company can finance itself on the market on better terms, as its shares may have a higher issue price for the same expected return.

Of course, the analysis has its limits.

In the first place, it might encompass a longer period, however, as explained above, we purposely avoided to consider the years before 2001 as they have been strongly affected by non-economic factors. The sharp increase in prices at the end of the 1990's has encourages bullish expectations that were not based on an accurate analysis of corporate fundamentals and prospects. In other words, prices were far over-evaluated.

Furthermore, the analysis could be enlarged under a territorial respect, by taking in consideration other markets.

No regression was carried out in order to avoid any problem related to omitted variables not available at the moment. An important variable seems to be the growth of expected profits in subsequent years. However, our purpose was to highlight the importance of the management's ability to convey information of adequate quality level rather than to identify results with a high statistic significance. A more refined regression analysis will be the subject of future research.

References

- AMIHUD Y., MENDELSON H., "Asset Pricing and the Bid Ask Spread", *Journal of Financial Economics*, December 1986, Vol. 17, Issue 2.
- ASHTON D., "Discussion of Cost of Capital, Strategic Disclosure and Accounting Choice", *Journal of Business Finance & Accounting*, April/May 2005, Vol. 32, Issue3/4.
- BAIMAN S., VERRECCHIA R., "The Relation among Capital Markets, Financial Disclosure, Production Efficiency and Insider Trading", *Journal of Accounting Research*, Spring 1996, Vol. 34, Issue 1.
- BECCALLI E., MILLER P., O'LEARY T., "Informazioni non finanziarie e disclosure tecnica nelle previsioni degli analisti finanziari. Il caso Intel Corp", *Banche e Banchieri*, n. 5/2006.
- BLOOMFIELD R.J., WILKS T.J., "Disclosure Effect in the Laboratory: Liquidity Depth and the Cost of Capital", *Accounting Review*, January 2000, Vol. 75, Issue 1.
- BOTOSAN C.A., "Disclosure Level and Cost of Equity Capital", *Accounting Review*, July 1997, Vol. 72.

- BOTOSAN C.A., PLUMEE M.A., "The Role of Information Precision in Determining the Cost of Equity Capital", *Review of Accounting Studies*, June-September 2004, Vol. 9, Issue 2/3.
- BOTOSAN C.A., "Disclosure and the Cost of Capital: what do we know?", *Accounting & Business Research*, 2006, Special Issue, Vol. 36.
- BRENNAN M.J., TAMAROWSKI C., "Investor Relations, Liquidity and Stock Pricing", *Journal of Applied Corporate Finance*, Winter 1999.
- CLARKSON P., GIEDES J., THOMPSON R., "On the Diversification Observability and Measurement of Estimation Risk", *Journal of Financial and Quantitative Analysis*, March 1996, Vol. 31, Issue 1.
- COLES J., LOEWENSTEIN U., SNAY J., "On Equilibrium Pricing under Parameter Uncertainty", *Journal of Financial and Quantitative Analysis*, September 1995, Vol. 30, Issue 3.
- COLOMBI F., *Finanza condizionata e teoria del valore*, Aracne, Roma, 2003.
- COOPER S., "Discussion of Disclosure and the Cost of Capital: what do we know?", *Accounting & Business Research*, 2006, Special Issue, Vol. 36.
- CORVI E., *Comunicazione d'impresa e Investor Relation. La gestione della comunicazione economico-finanziaria*, Egea, Milano, 2000.
- DEL BOSCO B., "Internet Use for Corporate Social Disclosures: Evidence from Italian Listed Companies", *Finanza, Marketing e Produzione*, n. 2/2004.
- DIAMOND D.W., VERRECCHIA R.E., "Disclosure, Liquidity and the Cost of Capital", *Journal of Finance*, September 91, Vol. 46, Issue 4.
- EASLEY D., O'HARA M., "Information and the Cost of Capital", *Journal of Finance*, Vol. 59, August 2004.
- FAMA E.F., "Efficient Capital Markets: A Review of Theory and Empirical Work", *Journal of Finance*, Vol. 25, May 1970.
- FAMA E.F., "Efficient Capital Markets: II", *Journal of Finance*, Vol. 46, December 1991.
- FRANCIS J.R. KHURANA I.K., PEREIRA R., "Disclosure Incentives and Effects on Cost of Capital around the World", *Accounting Review*, October 2005, Vol. 80.
- GELB D., STRAWSER J., "Private versus Public Debt Placement: Does Financial Disclosure Level Affect Debt Placement?", *Journal of Accounting & Finance Research*, Fall II 2004, Vol. 12, Issue 5.
- GIETZMANN M., IRELAND J., "Cost of Capital, Strategic Disclosures and Accounting Choice", *Journal of Business Finance & Accounting*, April/May 2005, Vol. 32.
- GIULIANI S., "La comunicazione economico-finanziaria", in PASTORE A., VERNUCCIO M., *Impresa e Comunicazione. Principi e Strumenti per il Management*, Apogeo, Milano, 2006.
- GLOSTEM L., MILGROM P., "Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders", *Journal of Financial Economics*, March 1985, Vol. 14, Issue 1.
- GOLINELLI G.M., *L'approccio sistemico al governo dell'impresa. La dinamica evolutiva del sistema impresa tra economia e finanza*, Vol. II, Cedam, Padova, 2000.
- GROSSMAN S.J., STIGLITZ J.E., "On the Impossibility of Informationally Efficient Markets", *American Economic Review*, Vol. LXX, n. 3, 1980.
- GUATRI L., BINI M., *Nuovo Trattato sulla Valutazione delle Aziende*, Egea, Milano, 2005.
- GUOCHANG Z., "Private Information Production, Public Disclosure, and the Cost of Capital: Theory and Implications", *Contemporary Accounting Research*, Summer 2001, Vol. 18.

- HAIL L., "The Impact of Voluntary Corporate Disclosures on the ex-ante Cost of Capital for Swiss Firms", *European Accounting Review*, December 2002, Vol. 11.
- HANDA P., LINN S., "Arbitrage Pricing with Estimation Risk", *Journal of Financial and Quantitative Analysis*, March 1993, Vol. 28, Issue 1.
- HEALY P., HUTTON A., PALEPU K., "Stock Performance and Intermediation Changes Surrounding Sustained Increases in Disclosure", *Contemporary Accounting Research*, Fall 1999, Vol. 16, Issue 3.
- JENSEN M., "The Performance of Mutual Funds in the Period 1945-1964", *Journal of Finance*, May 1968.
- JENSEN M., MECKLING W., "Theory of the Firm: Management Behavior, Agency Costs, and Ownership Structure", *Journal of Financial Economics*, 3/1976.
- LEUZ C., VERRECCHIA R.E., "The Economic Consequences of Increased Disclosure", *Journal of Accounting Research*, 2000, Supplement, Vol. 38, Issue 3.
- MARQUADT C., WIEDMAN C., "Voluntary Disclosure, Information Asymmetry and Insider Selling through Secondary Equity Offerings", *Contemporary Accounting Research*, Winter 1998, Vol. 15, Issue 4.
- MAZZOLA P., *Le investor relations*, Egea, Milano, 2006.
- QUAGLIA A., TEODORIC. (a cura di), *I siti web e la comunicazione ai mercati finanziari. Gli strumenti e gli intermediari*, Franco Angeli, Milano, 2005.
- RENZETTI M., TAMAROWSKI C., "La comunicazione finanziaria quale fattore di successo", *Economia e Management* n. 2/2000.
- ROBERTS H., "Statistical versus Clinical Prediction of the Stock Market", paper not published and presented at the *Seminar on the Analysis of Security Prices*, University of Chicago, May 1967.
- SENGUPTA P., "Corporate Disclosure Quality and the Cost of Debt", *Accounting Review*, October 1998, Vol. 73, Issue 4.
- VISCONTI L.M., "Responsabilità sociale e disclosure d'impresa: un'analisi critica della letteratura", *Azienda Pubblica*, n. 6/2002.
- WELKER M., "Disclosure Policy, Information Asymmetry and Liquidity in Equity Markets", *Contemporary Accounting Research*, Spring 1995, Vol. 11, Issue 2.