Value relevance and codes of ethics: an empirical analysis of Italian listed companies

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Abstract: The aim of this paper is to provide empirical evidence regarding the value relevance of Italian listed companies’ codes of ethics. The literature describes several studies investigating the value relevance of single non-financial ethic-related variables, but we cannot find any study aimed at examining the value relevance of codes of ethics and, therefore, this paper tries to fill this research gap. The main idea of this research is that a code of ethics, seen as a ‘summarisation’ of ethical variables, might be value relevant in the same way as single ethic-related information. Our hypotheses state that codes of ethics may be value relevant: 1) if the first adoption of the code of ethics is value relevant; 2) if the quality of the code of ethics is value relevant. We tested our hypotheses on the first 100 companies listed on the Italian Stock Exchange, in the years 2002–2011. Empirical results show that our hypotheses are verified. The paper also provides insights for future research and further developments.

Keywords: code of ethics; Ohlson model; value relevance; content analysis; Italian listed companies; Italy.

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A sizeable proportion of the literature focuses on the quality of financial disclosure, considered as the main means by which stakeholders can understand the firm’s current economic and financial conditions and how it proposes to achieve future objectives (Tucker, 2015; SEC, 2003; Singhvi and Desai, 1971; Chen et al., 2015; Lobo and Zhou, 2001). According to a large part of the academic literature (Barth et al., 2001; Holthausen and Watts, 2001), the most important quality parameter that makes accounting information useful to investors is the concept of ‘value relevance’, which states that an accounting amount is only ‘value relevant’ if it provides investors with information relevant to their evaluating of the firm through its stock price.

Although the majority of studies have focused on the value relevance of financial information, recent literature shows that increasing attention is being given to the value relevance of non-financial information. Indeed, many scholars have focused their analyses on the effects that ethical aspects may have on the value relevance of accounting variables (Hirschey et al., 2001; Kulkarni, 2000; Lourenço et al., 2014; Kaspereit and Lopatta, 2016; Schadewitz and Niskala, 2010; Semenova et al., 2010; Carnevale et al., 2012).

An example of this is that the literature shows increasing interest in examining the value relevance of environmental performance (Hassel et al., 2005; Barth and McNichols, 1994; Al-Tuwaijri et al., 2004; Hughes, 2000), corporate sustainability reputation (Berthelot et al., 2012; Barth and McNichols, 1994; Clarkson et al., 2004; Cormier et al., 1993; Cormier and Magnan, 1997; Lourenço et al., 2014), and social reporting (Carnevale et al., 2012). Therefore, particularly over the last decade, scholars have found that attention to ethical behaviour tends to increase investor confidence, is beneficial to stock markets and is value relevant for investors.

From this point of view, the aim of the present study is to examine whether the main document reporting the existence of ethical behaviour within the company (i.e., the code of ethics) is considered value relevant by investors. Given that most contributions to the literature analyse specific ethical fields (attention to the environment, corporate sustainability reputation, social reporting, etc.), we ask ourselves whether the code of ethics, which gathers the most important information about ethics, such as firm values, ethical principles and ethical behaviour, and provides details of the company’s main business ethics policies, is value relevant for investors.

In order to do this, we start by examining whether the first adoption of a code of ethics is considered value relevant by investors. Then, given that the literature shows that the mere adoption of a code of ethics cannot be considered sufficient in itself to promote ethical behaviour within the company (Anand et al., 2004; Gellerman, 2003; Fisher, 2000; Kitson, 1996), we measure the quality of the code of ethics, so as to examine whether codes of a higher quality are more value relevant to investors than lower quality codes.

Therefore, we conduct a preliminary content analysis of the codes of ethics to build a quality index, following the method used by Garegnani et al. (2015). Then, we apply the Ohlson (1995) model to determine whether:

a. the first adoption of a code of ethics is value relevant to investors

b. the codes of ethics with higher quality indices are more value relevant than those with lower quality indices.
The paper is organised as follows: Section 2 illustrates the theoretical background relating to codes of ethics and value relevance, together with the development of the research hypotheses; Section 3 describes the hypotheses development; Section 4 illustrates the method used for the analysis; Section 5 shows the results of the analysis and Section 6 discusses the conclusions of the research, limits and possible future developments.

2 Theoretical background: a review of academic works

There has been a considerable increase in the adoption of codes of ethics over the last two decades, both in response to financial scandals (Fombrun and Foss, 2004; Stevens, 1994; Cowton and Thompson, 2000) and because of the different goals that companies try to pursue through this adoption.

One of the main objectives underlying the adoption of codes of ethics is to design and institutionalise principles and values that configure the ethical behaviour of the company (Singh, 2011; Cleek and Leonard, 1998). In doing so, a code of ethics allows the development of a shared ethical culture within the company, which helps generate a sense of belonging in employees (Gaumnitz and Lere, 2002), and clarification of the norms and the responsibilities within the firm, thereby building the organisation’s ethical climate (Kaptein, 2004; Schwartz, 2004; Nijhof et al., 2003; Fisher, 2001; Wotruba et al., 2001). Some studies suggest that the aims of codes of ethics have been gradually aligned to changes in the concept of ethics over three main phases or generations: during the first one (‘80s–’90s), codes of ethics were used to merely comply with legal requirements; during the second generation, the focus of codes of ethics extended to the stakeholders and to the responsibility of the company in their regard; in today’s third generation, the focus is on every aspect of the interconnected, globalised, environment (Stohl et al., 2009).

According to Berenbeim (2000), the increasing importance of codes of ethics is due to the globalisation of markets, to the recognition of the codes as a part of corporate governance and to the enhanced ethical knowledge of senior managers. In some cases, companies are required to have a code of ethics to do business: for example, listed companies on the New York Stock Exchange are required to include specific procedures in their codes of ethics and to comply with specific standards (Verschoor, 2002).

Most recent literature shows that the main reason for managers’ adopting a code of ethics is to satisfy the increasing attention paid by stakeholders to issues of corporate social responsibility (Brickley et al., 2002; Waddock et al., 2002; Béthoux et al., 2007; Calderón et al., 2012) and to develop the company image and reputation in the eyes of its stakeholders (McKinney et al., 2010; Carasco and Singh, 2003). A code of ethics could even increase investor confidence if social norms are effectively built and measures to deter opportunistic behaviour are successfully taken (McKinney and Moore, 2008; Davidson and Stevens, 2013).

In this sense, Frankel (1989) provides a detailed summary of all possible functions of a code of ethics: providing group guidance and a basis for the evaluation of professional performance, strengthening the sense of common purpose, promoting reputation and public trust, preserving entrenched professional biases, discouraging and sanctioning unethical behaviour, providing support for individuals when they are under pressure to
behave unethically, and providing a basis to solve internal disputes between members. In addition, codes of ethics are also helpful for companies to prevent or reduce penalties in legal proceedings (Stevens, 1994), especially if, at the time of the violation, they were able to demonstrate the existence of an effective ethics compliance program (McKendall et al., 2002). Moreover, the issue relating to the capacity of the code of ethics to stimulate ethical behaviour is greatly discussed and controversial (Cowton and Thompson, 2000; Farrell et al., 2002; Kaptein, 2011; Cleek and Leonard, 1998; Singh, 2006, 2011; Somers, 2001; Schwartz, 2001).

Beside these studies, there is a current in the literature that criticises the effectiveness of codes of ethics, on the one hand, because of the isomorphic behaviour of managers who display textual commonalities in their codes of ethics, giving rise to the so called ‘cut and paste society’ (Forster et al., 2009; Holder-Webb and Cohen, 2012), and, on the other hand, because the adoption of a code of ethics is not enough to guarantee ethical behaviour within a company (Gellerman, 2003; Wotruba et al., 2001; Kelly, 2005; Kitson, 1996). According to some authors, unethical behaviour is situational (Gellerman, 2003) or due to the greed and dishonesty of senior managers (Carroll and Scherer, 2003) or to rationalisation processes (Anand et al., 2004). A substantial proportion of the literature agrees that top and senior management have the highest responsibility in promoting (dissuading) ethical (unethical) behaviour within a company (Anand et al., 2004; Finn et al., 1988; Fisher, 2000; Gellerman, 2003; Kelly, 2005; Kitson, 1996). Top managers and CEOs should communicate and promote ethics within a company through their day-to-day behaviour (Kitson, 1996; Lamb, 1999).

According to the literature analysed so far, companies which adopt codes of ethics are looking for legitimacy by pursuing an institutional isomorphism. This concept is defined by Powell and DiMaggio (2012) as ‘new institutionalism’, a theory which states that companies, in order to survive, comply with the predominant structural and procedural rules and belief systems within which they operate.

On the basis of this theory, once a company develops a code of ethics, managers make it public in order to find legitimacy and to demonstrate to stakeholders that the company is aligned with the dominant rules system in that social environment. However, companies which develop high quality codes of ethics, will be even more interested in making them public, not only for isomorphic aims, but especially to signal the high quality level of their codes of ethics to stakeholders. These concepts belong to the signalling theory (Magness, 2009; Akerlof, 1970; Spence, 1973), which states that ‘good’ companies are more likely and more highly motivated to communicate their quality.

Regarding this, the role of commitment from the top is considered one of the most important ‘quality’ features that allow a code of ethics to be effective in developing ethical behaviour within a company (Garegnani et al., 2015; Carasco and Singh, 2003; Kaptein, 2011, 2008; Mayer et al., 2009; Thomas et al., 2004; Wiley, 1998). This current of literature is mainly based on the assumption that only ‘high quality’ codes of ethics are able to develop effective ethical behaviour within companies (Kaptein, 2011) and, from this point of view, some authors investigate the determinants of such effectiveness (Singh, 2011; Kaptein and Schwartz, 2008).

The growing frequency of the adoption of codes of ethics has led to equally increasing interest on the part of researchers, with particular reference to the reasons behind the adoption of these codes (Kaptein, 2011; Singh et al., 2011; Winkler, 2011). Nowadays, because the majority of companies are adopting a code of ethics, it is becoming even more interesting for scholars to understand what constitutes high quality
in such codes. Assessing the quality of ethical codes is, therefore, one of the most recent challenges that academics are faced with.

A systematic approach to assessing the quality of codes of ethics has been established, so far, by just a few scholars (Gaumnitz and Lere, 2002; Kaptein, 2008; Donker et al., 2008; Erwin, 2011; Callaghan et al., 2012; Garegnani et al., 2015). Gaumnitz and Lere (2002) assess the quality of codes of ethics by comparing nine ethical features in their framework with the ethical features disclosed in a code of ethics. Kaptein (2008) identified 14 items that codes of ethics should include to be considered of high quality. Donker et al. (2008) evaluates the quality of codes of ethics by comparing the number of moral values found in the ethical codes with a corporate value index constructed on the basis of ten commonly accepted moral values. Erwin (2011) measures the quality of a code of ethics through a framework which breaks down the code of ethics into eight ethical areas. Callaghan et al. (2012) assess the quality of a code of ethics by using nine markers belonging to two main categories: staff support and compliance instruments. Finally, Garegnani et al. (2015) assess the quality of a code of ethics through a content analysis aimed at verifying the presence of 40 items, grouped into six categories.

Some of the abovementioned studies assess the quality of codes of ethics in order to examine other related variables. Donker et al. (2008), for example, examines whether a higher quality of codes of ethics affects firms’ performances or other structural variables; Callaghan et al. (2012) investigate whether the quality of codes of ethics depends on the companies’ country of origin; Garegnani et al. (2015) study whether companies’ structural characteristics (size, internationalisation, industry) affect the quality of their codes of ethics.

At present, the literature conceives of a code of ethics as one of the most critical instruments affecting a firm’s performance, promoting a company’s reputation and brand image, stimulating a sense of belonging, ensuring compliance with legal requirements, and conveying human behaviour toward the main corporate moral values. However, as shown above, only high-quality codes of ethics result in the achievement of such objectives and this high quality depends on the fulfilment of several ethical requirements. The importance of such quality has critical implications due to the fact that a significant branch of the literature on the value relevance of non-financial information shows that greater attention to ethical issues may lead to higher market evaluation (Lourenço et al., 2014; Kaspereit and Lopatta, 2016; Schadewitz and Niskala, 2010; Semenova et al., 2010; Carnevale et al., 2012).

3 Hypotheses development

Most studies of value relevance focus on accounting records and examine whether these are associated with stock prices, values or returns. Therefore, an accounting number is considered ‘value relevant’ if it is significantly related to the price of equity (Beaver, 2002, 1998; Ohlson, 1995; Collins et al., 1997; Barth, 2000). The majority of research in this field has investigated the value relevance of financial information (Carnevale et al., 2012), but, most recently, literature shows that the interest in the value relevance of non-financial variables has increased greatly. For example, the value relevance pertaining to environmental performance has been examined by several scholars over the last decade.
and a substantial number of them has shown that non-financial variables (relating to corporate sustainability) are value relevant (Johnston et al., 2008; Moneva and Cuellar, 2009; Sinkin et al., 2008; Berthelot et al., 2012; Chapple et al., 2013; Lourenço et al., 2012; Hussainey and Salama, 2010; Schadewitz and Niskala, 2010; Semenova et al., 2010; Kaspereit and Lopatta, 2016).

Confirmation of the value relevance of non-financial variables comes in the form of a study of corporate social reporting carried out on European banks, which suggests that social reporting is value relevant in some countries, but not in others (Carnevale et al., 2012). The authors of this study assessed the impact of social reporting on the value relevance of accounting variables following the approaches of Cormier and Magnan (2007), Cardamone et al. (2012) and Wooldridge (2002), that is, they allowed the SR (social reporting) variable to interact respectively with the book value per share (BPS) and earnings per share (EPS) variables so as to examine whether SR affects the impact of BPS and EPS on stock price.

According to a study by Lourenço et al. (2014), companies with higher corporate sustainability reputations show a net income from a higher valuation by the market. The authors analyse the value relevance of the book value of equity and net income of firms with a good reputation for sustainability and they conclude that a reputation for good sustainability is value relevant for investors. This is in line with Robinson et al. (2011), who assert that a good reputation for sustainability has the potential to increase the value of a firm’s expected cash flows and to decrease the variability of its cash flows.

Using the Ohlson model, Sinkin et al. (2008) study the relationship between the adoption of eco-efficient business strategies and firm value and find that the adoption of such strategies is positively associated with firm value. They conclude that eco-efficient companies have higher market values than non-eco-efficient companies. Also adopting the Ohlson model, but achieving contrasting results, Moneva and Cuellar (2009) examine the relationship between a firm’s market value and environmental reporting by using both financial and non-financial environmental information. They find that only the financial environmental information is value relevant. In a similar vein, Greeves and Lapido (2004) analyse the value relevance of responsibility reporting in compliance with the Global Reporting Initiative (GRI) guidelines and find that companies with high-quality GRI reporting (i.e., companies that not only refer to GRI guidelines, but publish a detailed GRI index) have lower share-price volatility, higher operating profit margins and higher revenue growth. Other authors agree that GRI reporting is an explanatory factor for a firm’s market value and that high-quality GRI reporting is even more beneficial for stock markets (Schadewitz and Niskala, 2010; Clarkson et al., 2008).

On the basis of the abovementioned research, it is quite clear that ethical issues – such as environmental performance, reputation and corporate sustainability – have a critical role in influencing a firms’ market value.

This is particularly true when the ethical behaviour of a company – or the effects of its ethical behaviour – is formalised within a high-quality document. Hence, some points can be summarised from this analysis:

a the literature largely agrees that ethical variables are beneficial to stock markets and value relevant for investors

b ethical variables and ethical behaviour are well formalised in a code of ethics
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The aim of our research is to fill this gap. In other words, as it has been demonstrated that ethical issues are value relevant, then it seems plausible that the code of ethics, which gathers together a company’s main ethical issues, should be value relevant as well.

On one hand, under the ‘new institutionalism’ theory (DiMaggio and Powell, 2012), the adoption of a code of ethics may derive from the company’s search for legitimacy and be carried out by following isomorphic aims.

On the other hand, according to the signalling theory, companies adopt codes of ethics to improve their image and reputation, and, in doing so conform with other more virtuous companies. Therefore, managers of high-quality firms are more willing to signal the value of their firms to their stakeholders (Magness, 2009; Akerlof, 1970; Spence, 1973).

Given that high-quality codes of ethics are expected to be more value relevant than low-quality codes, a newly adopted code of ethics is also expected to be value relevant. In fact, it is plausible to expect that a code of ethics adopted for the first time is value relevant for investors. When a company starts to disclose its ethical issues, the information disclosed are expected to influence the firms’ market value, as confirmed by the abovementioned literature. Therefore, we pose our first research hypothesis as follows:

H1 First adoption of code of ethics is value relevant.

Furthermore, if the code of ethics is of a high quality, then it is even more reasonable to hypothesise that it is value relevant for investors. Thus, our second research hypothesis is:

H2 High quality codes of ethics are more value relevant than low-quality ones.

4 Method: sample selection, variables and measurements, value relevance analysis

In order to test the research hypotheses, we selected the first 100 companies listed on the Italian Stock Exchange, 40 of which were listed on the FTSE MIB and 60 on the FTSE Italy Mid Cap Index. We then collected each company’s code of ethics from their websites and conducted a content analysis following the methodology of Garegnani et al. (2015), described further below, with some adaptations.

In addition, for each of the 100 companies, we gathered the financial data (along with all non-ratio variables expressed in euros) needed for our statistical analysis from the AIDA database, relating to the 2002–2011 time period. In this time range, we also collected the stock price and the values of the Italian stock market data from Datastream Thomson Reuters, and data regarding investments with no credit risk (Bund) from Bloomberg (http://www.bloomberg.com/europe).

We thus obtained a sample composed of 1,000 observations, one for each of the 100 companies in each of the ten years. We chose the 2002–2011 period because, in this time range, the sampled companies adopted the code of ethics for the first time.
With regard to the financial information, the meaning of ‘relevant’ is different from that of ‘reliable’. Information is value-relevant if it is considered by investors in their firm evaluation process, as shown by studies on value relevance, which aim at verifying the statistical association between firms’ accounting value and market value. Information is reliable when it is complete and free from deliberate biases and material errors. Reliability refers to the expected future benefits and to the probability that these expected benefits are realisable (Wyatt, 2008). For example, some empirical evidence suggests that in certain circumstances, e.g., in the case of investors’ overreaction to specific information (Daniel and Titman, 2006), such information may be value-relevant, but this has nothing to do with its reliability.

The most well-known model in the value relevance analysis field is that of Ohlson (Ohlson, 1995; Feltham and Ohlson, 1995). The Ohlson model relies on three basic assumptions (Dechow et al., 1999): first, the firm’s equity market value is equal to the present value of expected dividends. This assumption is derived from the dividend-discounting model (DDM), the traditional model for firm evaluation (Miller and Modigliani, 1961), which approaches the problem of firm evaluation from the shareholder’s perspective. Second, the Ohlson model evaluates assets by following a form of accounting called ‘clean surplus relationship’ (CSR), which assumes that goodwill (equity market value minus book value of the firm) will equal the present value of expected future abnormal earnings. Third, abnormal earnings follow an auto-regressive process in such a way that goodwill equals current abnormal earnings, which is standardised by a constant. As a consequence, it is possible to derive the firm’s market value by simply assessing the stream of abnormal earnings, without referring to expected dividends. In the Ohlson model, dividends paid in the present reduce book value with no effect on current earnings. Thus, two properties which are strongly related to Miller and Modigliani’s [1961, pp.411–433; Modigliani and Miller, (1958), pp.261–297] work are satisfied. Several studies have attempted to validate the Ohlson model. Bernard (1995), for example, points out that in comparison with firm evaluation models based on discounted cash flow, the Ohlson model is better in explaining the movement of share price, because it uses book value and earnings. A further confirmation of the validity of the Ohlson model is provided by Penman and Sougiannis (1998), who compare common equity evaluation methods, such as techniques based on accrual earnings, dividend discount techniques and discounted free cash flow analysis, and find out that techniques based on accrual earnings (such as the Ohlson model) provide the lowest evaluation error with respect to other methods. Other examples of scholars who adopt the Ohlson model include Amir and Lev (1996), Kristandl and Bontis (2007), Wang (2008) and Liu et al. (2009).

The Ohlson model uses the accounting data of income statements and balance sheets and employs the firm’s book value, residual income and ‘other information’ to explain share price movement. In its most simple form, the Ohlson model can be written as:

\[ P_t = BV_t + \alpha_1 X_t + \alpha_2 Y_t \]

where

- \( P_t \) = market value of common stock as measured at the end of period \( t \).
- \( BV_t \) = net asset book value at the end of period \( t \).
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$X_t$ residual (excess) income at time $t$, that is, earnings at time $t$ minus the product between the equity book value at time $t-1$ and the $rf$ (risk-free) rate (for example, the treasury security yield).

$v_t$ information at the end of period $t$.

Ohlson (1995) introduces the variable $(v_t)$ to represent value relevant ‘other information’, although he does not give a definition of ‘other information’ in the model. However, researchers have often used the category of ‘other information’ to examine the value relevance of non-financial information. Among these researchers, Amir and Lev (1996) examine the value relevance of financial information and non-financial information for investors in the wireless communication industry. They find that non-financial variables indicate a high degree of value correlation. Other researchers, including Wang (2008) and Liu et al. (2009) have more recently used the ‘other information’ category to provide evidence for the value relevance of non-financial information empirically. As shown by aforementioned literature (Schadewitz and Niskala, 2010; Clarkson et al., 2008), on the one hand, the variable referring to ‘other information’ does not yet influence either current earnings or book value, but, on the other hand, investors immediately value this ‘other information’ and, so, affect the market prices of the shares with a very short time-lag (Amir and Lev, 1996; Wang, 2008; Liu et al., 2009). Formally, this information updates the next period abnormal earnings and, therefore, has to be included in the evaluation function. Among such ‘other information’, several authors include information relating to ethical issues. In this sense, Schadewitz and Niskala (2010) consider voluntarily disclosed responsibility reporting as a special category of ‘other information’ and apply the Ohlson model by representing such information as $(v_t)$. The authors also find that such information is value-relevant. In line with this study, we consider the information disclosed in the code of ethics in the year $t$ as ‘other information’ $(v_t)$. Therefore, in applying the Ohlson model, we introduce the variable ‘CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR’ into our framework, rewriting equation 1 as follows:

$$ P = BV_t + \alpha_1 X_t + \alpha_2 \text{CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR}, $$

(2)

Through the CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR variable, we examine whether investors evaluate information included in the code of ethics and whether this evaluation might be reflected in market prices of shares. Basing on the assumptions of Ohlson model, we consider that the ‘other information’ included in the code of ethics has not yet been priced into either earnings or book value. However, investors evaluate this ‘other information’ and their assessments influence share price. In particular, investors expect that the adoption of a code of ethics will lead to future benefits which will be reflected in higher future earnings to be reported in the next periodic income statement.

In order to investigate our hypotheses, we measure the abovementioned CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR for each firm in the sample and at the end of the year in which the code of ethics was adopted.

More specifically, following the methodology of Garegnani et al. (2015), who examine the presence/absence of 40 items disclosed in the code of ethics, we checked the
presence/absence of 52 items (see Appendix), grouped into six categories (see Table 1) for each code of ethics.

Table 1 Categories checked in the content analysis

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<table>
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<tbody>
<tr>
<td>1</td>
<td>Commitment from the top</td>
</tr>
<tr>
<td>2</td>
<td>Style and availability</td>
</tr>
<tr>
<td>3</td>
<td>Whistle-blowing</td>
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<tr>
<td>4</td>
<td>Relations with stakeholders</td>
</tr>
<tr>
<td>5</td>
<td>Compliance procedures</td>
</tr>
<tr>
<td>6</td>
<td>Legal items</td>
</tr>
</tbody>
</table>

Then, for each category, we measured the total number of items disclosed in each code and converted this number into a decimal base quality index. For example, if we identified four items out of a total of 6, we calculated the index by dividing 4 by 6 and multiplying the result by 10. This general rule, applied to calculate the quality index of each category, is shown as follows:

\[
\text{Category quality index} = \frac{\text{Number of items found for category}}{\text{Total number of items for category}} \times 10
\]

The \( \text{CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR}_{it} \) for each company is then obtained calculating the arithmetic average of the six category quality indexes, as follows:

\[
\text{CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR}_{it} = \frac{1}{6} \times \sum_{i=1}^{6} \text{Category quality index}
\]

Once the \( \text{CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR}_{it} \) variable is determined, we use the abovementioned equation (2) as the basis of our regression model. To implement our model, we add the firm subscript \( i \) to the equation, to indicate a generic firm ‘\( i \)’ in the sample. Then, we deflate all monetary variables by the number of shares outstanding and, afterwards, we add the intercept \( b_0 \) to the equation. Given the statistical nature of the model, we include \( \epsilon_t \) to represent the stochastic errors, which are assumed to have normal distribution, a mean of zero and to be uncorrelated with other variables in the model.

We can thus write the multiple linear regression equation as follows:

\[
P_{it} = b_0 + b_1 BV_{it} + b_2 X_{it} + b_3 \text{CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR}_{it} + \epsilon_t
\]

(3)

where

- \( P_{it} \) = the market value of a single common stock as measured six months after the end of year \( t \). This six-month period is to give investors enough time to become informed of the contents of the financial statements for year \( t \). In order to avoid our revelations being influenced by eventual anomalous trends regarding a particular day’s trading, we calculate \( P_{it} \) as the average stock market value for the first 15 days of June in the year \( t + 1 \).
• $BV_t = \text{net asset book value at the end of year } t$.

• $X_t = \text{Residual (excess) income in period } t, \text{that is, earnings at time } t \text{ minus the product between the equity book value at time } t - 1 \text{ and the } rf \text{ (risk-free) rate. The yield of German ten-year bonds (Bund) could be taken as a reference for the risk-free rate in the EU.}$

• CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR = the quality index of a company’s code of ethics. This is calculated for the year in which the code of ethics was adopted, while it assumes value ‘0’ for the other years.

The $BV$ and $X$ variables are deflated by the number of shares outstanding.

5 Results

The information contained in a code of ethics is value-relevant if we find a statistical association between this information and the share market value. The existence of a statistical association is investigated by testing whether $'b_3'$, the estimated regression coefficient in equation (3), is significant. In particular, our expectations are satisfied if we find that the value of the regression coefficient $b_3$ is significantly different from 0 (at a level of statistical significance of at least $p < 0.05$) and positive.

Table 2 Coefficient estimates from the regression (of market value) based on the following equation: $P_t = b_0 + b_1BV_t + b_2X_t + b_3$ CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR + $\varepsilon_t$

<table>
<thead>
<tr>
<th>Coefficient and test statistics</th>
<th>Coefficient</th>
<th>t-statistics</th>
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</thead>
<tbody>
<tr>
<td>$BV_t$</td>
<td>0.510 ($b_1$)</td>
<td>2.33*</td>
</tr>
<tr>
<td>$X_t$</td>
<td>0.410 ($b_2$)</td>
<td>1.98*</td>
</tr>
<tr>
<td>CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR</td>
<td>5.284 ($b_3$)</td>
<td>2.87**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.021</td>
<td></td>
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<tr>
<td>$F_{sign}$</td>
<td>3.981*</td>
<td></td>
</tr>
</tbody>
</table>

Notes: The results of the t-statistics test are reported for all of the coefficients.

$N = 1,000$; $t$ statistics test: *significant at 0.05 (one-tailed); **significant at 0.01 (one-tailed).

Table 2 shows regression results and test results. The significance of each regression coefficient is evaluated by using the t-statistic. The value of the regression coefficient on CODE_OF_ETHICS_QUALITY_INDEX_IN_ADOPTION_YEAR is significantly different from 0 (the coefficient is $b_3 = 5.284$ at $p < 0.01$), which means that share market value is affected by the adopting of a code of ethics for the first time. This confirms our hypothesis H1, suggesting that the adoption of codes of ethics is value relevant. In addition, the $b_3$ coefficient is positive, which means that high-quality codes of ethics affect the share market value more than low-quality codes of ethics do, as suggested by our hypothesis H2.

Our model explains about 2.1% of the variance in share market value and although this percentage may seem low, it is nevertheless statistically significant as the value of
$F_{\text{sign}}$, which is significant at 0.05, is 3.981. This means that our model is only capable of explaining a part of the complexity of the entire 'share market value' phenomenon, which was studied with respect to the sampled firms. It is necessary to bear in mind that firm market value is a complex phenomenon and that a code of ethics can only represent a limited part of the variables affecting the market value of a firm.

In addition, we examine the variance inflation factor ($VIF$) of each independent variable of the regression model in order to detect potential problems with multicollinearity. As $VIF$ value is particularly low in the model (2.09), there is no multicollinearity within variables. In fact, only a variable whose VIF value is greater than ten may indicate the potential occurrence of multicollinearity (Kennedy, 1992).

6 Conclusions, limitations and future developments

In this paper, we assessed whether the first adoption of a code of ethics is value relevant and whether high quality codes of ethics are more value relevant than low quality ones. We based our analysis on the 2002–2011 time period, the range within which the sampled companies adopted their codes of ethics for the first time. We also measured the quality of codes of ethics by creating a 'code of ethics quality index' and tested our hypotheses on a sample of 100 companies listed on the Italian Stock Exchange. By applying the Ohlson model, we found that codes of ethics are value relevant when they are adopted for the first time and when they are high-quality codes of ethics.

These results fill the research gap regarding this issue. Indeed, the literature shows several studies which analyse the correlation between single ethic-related variables and their value relevance while, in our research, we study the association between an entire code of ethics – i.e., the whole set of ethic-related variables contained in a code of ethics – and value relevance. Therefore, our research contributes to the literature by providing empirical evidence that a code of ethics affects investors’ evaluation of companies, both when it is adopted for the first time and when it is a high quality code of ethics. Thus, our study provides companies with important information about the capacity of a code of ethics to affect the share price.

Furthermore, the research has several practical and managerial implications: first of all, managers could strategically consider adopting a code of ethics for the first time, or improving the quality of their current code of ethics, in order to increase the value of their company; in addition, managers might find it helpful to use the items proposed in this research to measure or improve the quality of their code of ethics, or to compare their own code of ethics with that of their competitors; furthermore, the identification of the elements which may affect the quality of a code of ethics may assist regulators in selecting best practices and, thus, in checking and updating requirements for codes of ethics.

The main limitation of our research is due to the lack of available information relating to the periodic updating of codes of ethics. Therefore, we were not able to assess the value relevance of codes of ethics for each year (or for each update). Instead, we had to conduct the analysis by taking advantage of the fact that, during the 2002–2011 time period, all of the sampled companies presented their code of ethics for the first time. Another limitation is that the quality index that we obtain from the content analysis is used to test both our hypotheses. The results of our research are coherent with the Ohlson model. In particular, we measure the effects of the issuing of a code of ethics on
shareholder value, by employing the ‘other information’ variable in the Ohlson model. This ‘other information’, which is acquired by investors after a very short time-lag, affects the shareholder value at the same time, but does not affect current financial data, i.e., current earnings or book value. In the model, such ‘other information’ affects the abnormal earnings of the next periods and, given that investors evaluate the present value of future earnings, ‘other information’ has, therefore, to be included among the variables that influence shareholder value.

This research opens further avenues for studying value relevance. For example, it might be interesting to assess the value relevance of a code of ethics after each update approved by the board of directors. A more in-depth analysis could be performed by extending the sample to companies listed on other stock markets and another analysis might compare the market response in different sectors, with the aim of finding out whether value relevance is higher in certain sectors than in others.

References


Appendix

Table A1   Items checked in the content analysis

<table>
<thead>
<tr>
<th>1</th>
<th>Commitment from the top</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Clear definition of corporate values from the top</td>
</tr>
<tr>
<td>1.2</td>
<td>Definition of ethical principles</td>
</tr>
<tr>
<td>1.3</td>
<td>Recommended behaviour rather than prohibitions</td>
</tr>
<tr>
<td>1.4</td>
<td>Introductory letter from top management</td>
</tr>
<tr>
<td>1.5</td>
<td>Name and/or signature of CEO and/or top management</td>
</tr>
<tr>
<td>1.6</td>
<td>Management support for the circulation of the document</td>
</tr>
<tr>
<td>1.7</td>
<td>Quoting revisions of the code of ethics</td>
</tr>
<tr>
<td>1.8</td>
<td>Quoting the year(s) of prior revisions</td>
</tr>
<tr>
<td>1.9</td>
<td>Date of approval of current code of ethics</td>
</tr>
<tr>
<td>1.10</td>
<td>Adoption of internal functions devoted to ethics (e.g., ethics officer, ethics committee, etc.)</td>
</tr>
<tr>
<td>1.11</td>
<td>Company’s business description</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2</th>
<th>Style and availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Advantageous use of colours</td>
</tr>
<tr>
<td>2.2</td>
<td>Cover with customised logo</td>
</tr>
<tr>
<td>2.3</td>
<td>Quotation of website</td>
</tr>
<tr>
<td>2.4</td>
<td>Easy availability on the website</td>
</tr>
<tr>
<td>2.5</td>
<td>Presence of tables of contents</td>
</tr>
<tr>
<td>2.6</td>
<td>Presence of examples and FAQs</td>
</tr>
<tr>
<td>2.7</td>
<td>Provisions for dual language (local language and English)</td>
</tr>
<tr>
<td>2.8</td>
<td>Writing style (direct, peremptory, active voice)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3</th>
<th>Whistle-blowing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Anonymity for whistle-blowers</td>
</tr>
<tr>
<td>3.2</td>
<td>Existence of a reporting policy</td>
</tr>
<tr>
<td>3.3</td>
<td>Non-retaliation policy</td>
</tr>
<tr>
<td>3.4</td>
<td>Presence of a section devoted to reporting</td>
</tr>
<tr>
<td>3.5</td>
<td>Set-up of different reporting mechanisms</td>
</tr>
<tr>
<td>3.6</td>
<td>Presence of mailbox/e-mail address – telephone/fax for reporting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4</th>
<th>Relations with stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Attention to professional development of staff</td>
</tr>
<tr>
<td>4.2</td>
<td>Specific codes of conduct with respect to customers and business-contractual counterparts</td>
</tr>
<tr>
<td>4.3</td>
<td>Specific codes of conduct with respect to shareholders</td>
</tr>
<tr>
<td>4.4</td>
<td>Specific codes of conduct with respect to suppliers</td>
</tr>
<tr>
<td>4.5</td>
<td>Specific codes of conduct with respect to political organisations and trade unions</td>
</tr>
<tr>
<td>4.6</td>
<td>Specific codes of conduct with respect to authorities</td>
</tr>
<tr>
<td>4.7</td>
<td>Specific codes of conduct with respect to the local community</td>
</tr>
<tr>
<td>4.8</td>
<td>Specific code of conduct with respect to business partners</td>
</tr>
<tr>
<td>4.9</td>
<td>Specific code of conduct with respect to public or private tenders</td>
</tr>
</tbody>
</table>

Source: Adapted from Garegnani et al. (2015)
Table A1  Items checked in the content analysis (continued)

5  Compliance procedures  
   5.1  Accountability  
   5.2  Anti-bribery policies  
   5.3  Conflicts of interest policy  
   5.4  Existence of internal control system backing up code of ethics  
   5.5  Existence of penalties for infractions of code of ethics  
   5.6  Description or examples of penalties  
   5.7  Protection of corporate property (both tangible and intellectual), corporate image and confidentiality  
   5.8  Provision of advisory service  
   5.9  Provision of training schemes  

6  Legal items  
   6.1  Anti-trust issues  
   6.2  Data protection and personal information  
   6.3  Equality and diversity empowerment  
   6.4  Health and safety in the workplace  
   6.5  Good citizenship and compliance with the law  
   6.6  Price-sensitive information and protection against insider trading and market abuse  
   6.7  Protection of the environment  
   6.8  Transparency and accuracy of financial information  
   6.9  Anti-money laundering policies  

*Source:* Adapted from Garegnani et al. (2015)