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THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY DISCLOSURE ON FIRM VALUE: THE MODERATING ROLE OF BOARD GENDER DIVERSITY IN FRENCH COMPANIES

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Abstract *Corporate social responsibility (CSR) and firm value have aroused the interest of an extensive literature. The relationship between these two strands of research remains thoroughly misunderstood, though. With the aim of offering a refined understanding and validation of the relationship proposed, the current paper aims at studying the relationship between CSR disclosure and firm value, after the transition of the European directive in large French companies, and scrutinising the effect of female boards on this relationship. This study was conducted by applying the Ohlson model (1995) among the largest companies listed on the CAC All-Tradable index for the period 2017-2019. The results of the study revealed a positive association between CSR disclosure and firm value after the transposition of the EU directive. Furthermore, we evince that gender diversity on boards enhances this relationship. To the best of our knowledge, this is a first attempt at studying whether the transition of the EU directive influences the value relevance of the directive's CSR disclosure requirements in large French companies. In addition, this study extends the existing literature by examining the effect of female boards. The outcomes may be of interest to academic researchers, investors, and regulators. For academic researchers, it is interesting to find out how the transition of the EU directive can improve the relevance of CSR disclosure. For investors, the results show the value of CSR practices in their business.*

Keywords: *CSR Disclosure, Firm Value, Board Gender Diversity, EU Directive*

INTRODUCTION

The last few years have been a defining period for corporate non-financial reporting in Europe. The introduction of the groundbreaking European Directive on Non-Financial Reporting and Diversity (Directive 2014/95/EU) has paved the way for greater transparency and corporate responsibility in social and environmental matters (Accountancy Europe, 2017).

The Directive requires that large companies disclose information regarding organising and managing social and environmental challenges. Companies must publish reports on the policies they have implemented regarding environmental, social, and employee-related issues, while respecting human rights and fighting against corruption and bribery. This can help stakeholders assess the non-financial performance of companies and encourage companies to develop a responsible approach to their activities (European Union, 2014).

The EU Directive on non-financial reporting was a milestone in improving company transparency in the EU Member States (Aureli et al., 2020). In fact, a new framework for the publication of non-financial information by large companies came into force in France on 1 August 2017, following the transposition of Directive 2014/95/EU, also known as the 'Corporate Social Responsibility (CSR) Directive'.

In recent decades, CSR became a topic of increasing interest to society, as well as to academics. Issues such as pollution, waste, resource depletion, product quality and safety, and workers' rights and status have become the focus of increasing attention and concern (Reverte, 2009). Business organisations are increasingly seen as responsible for their social and environmental impacts (Brammer et al., 2006). While companies that adopt CSR can be beneficial

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by remaining relevant to new generations and contributing to those in need (Daudisa & Vevere, 2020), the relationship between CSR and business value was not straightforward. In fact, several studies have found a positive relationship between CSR and firm value (Chung et al., 2018; Hu et al., 2018; Sciarelli et al., 2020), whereas other studies have found a negative relationship between CSR and firm value (Crisóstomo et al., 2011; Fanti & Buccella, 2017). Furthermore, some studies inquire about the true existence of a direct link between CSR and firm value (Al-Najjar & Anfimiadou, 2012; Schadewitz & Niskala, 2010). This lack of evidence of an empirical relationship between CSR and firm value has been explained by the fact that these studies missed important variables. These studies describe a situation in which the effect of CSR performance on firm value depended on the state of other causal variables (Walls et al., 2012; Alshammari, 2015). This supports the idea that the relationship between CSR and firm value is likely to be more complex than most studies that revealed and tested the moderating variables needed in this area.

Gender diversity on the board of directors is an important element in improving the corporate governance system and strategic decisions in the boardroom (Daily et al., 1999). Furthermore, board diversity can enhance the value of a company by allowing people with different experiences, backgrounds, ages, and genders to participate in the decision-making process (Carter et al., 2003). Women directors are also more willing to promote their company's social practices because of their psychological characteristics, unlike their male counterparts, which may make them more responsive to the demands of different stakeholder groups (Jain & Jamali, 2016). This is generally attributed to the fact that women's decisions tend to be more socially oriented than those of men (Issa & Fang, 2019).

To meet this research objective, a qualitative meaning-oriented analysis was used to study the non-financial reports of French listed companies that were required to disclose the NFI, resulting in a CSR disclosure index. Then, we used the value relevance methodology to study whether CSR disclosure affects stock price levels. We used a modified Ohlson model (Ohlson, 1995) in which non-financial information was added to the basic model as a proxy for non-accounting information.

The research has several original points when compared to other existing empirical researches on the issue. As far as we were aware, this is the first research that investigates the value relevance of CSR disclosure in a mandatory context (in France) after the adoption of the EU Directive. To our knowledge, this research is the first attempt to hypothesise a moderating effect of board gender diversity on the association between CSR disclosure and market value.

The research was conducted during the period 2017 to 2019, the years of implementation of mandatory CSR disclosure for large French listed companies. The main results confirm the existence of a positive relationship between CSR disclosure levels and the market value of a company. Furthermore, our study evinces a significant moderating effect of women's presence on boards on the relationship between CSR and market value. To ensure that our results were not dominated by a single industry and year, we control for year and country fixed effects.

The remainder of this paper is structured as follows. In the first section, we outline a brief review of the literature, and the existing theoretical relationship between CSR and firm value. In the second section, we develop the hypotheses of the study. Next, we describe the research methodology. The fourth section presents the results of the research and discusses their significance, respectively. The last section refers to the main implications for theory and practice, the limitations of the study, and the new avenues for future research.

CONCEPTUAL FRAMEWORK

Corporate Social Responsibility

Corporate social responsibility has been addressed by several authors, who, depending on contexts and periods, have given definitions that have evolved over time. The 1970s saw a wide range of definitions of CSR. Carroll (1979) defines CSR as "the social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time". More than a decade later, Wood (1991) defines CSR as "a business organization's configuration of principles of social responsibility, processes of social responsiveness, policies, programs, and observable outcomes as they relate to the firm's societal relationships". These two definitions share the importance of being able to link CSR practices to their consequences, both for the company itself and for society. Moreover, CSR seems to be a complex concept, referring to practices and policies that meet multiple requirements, not only social, but also economic, ethical, and legal.

A decade after Wood's definition, McWilliams and Siegel (2001) define CSR "as actions that appear to further some social good, beyond the interests of the firm and that which is required by law". This view has been criticised, particularly in the light of the internationalisation of business activities in different national and legal contexts (Kolk, 2016). According to this view, in certain institutional and legal frameworks that do not offer enough protection to the various local actors, compliance with the law is not enough to be considered socially responsible. In response to this criticism, Campbell (2007) offers a more comprehensive definition of CSR, where companies are described as socially responsible "if corporations do cause harm to their stakeholders, they must then rectify it whenever the harm is discovered and brought to their attention". This definition specifies the conditions under which firms will achieve a minimum level of CSR, rather than varying levels, regardless of the laws in place.

Based on the analysis of these definitions of CSR, there is no standard definition of CSR, and each contribution focuses on a particular aspect. Dahlsrud (2008), who presents a qualitative analysis of the content of 37 definitions, shows that the literature defines CSR with reference to five main characteristics, namely the environmental, social, economic, stakeholder, and voluntary components. The author then shows that the different definitions are similar with respect to these characteristics, and that the absence of a universal definition is not problematic for the conceptualisation of CSR.

More recently, researchers doing empirical work are trying to define CSR more pragmatically and link it to a three-dimensional assessment of the company, known as *the Triple Bottom Line* (Souza & Alves, 2018). This concept was developed by Elkington (1994) and defines corporate performance in a holistic way, taking into consideration social, environmental, and financial performance.

The Regulatory Framework in France: The Transposition of Directive 2014/95/EU

Decree No. 2017-1265 of 9 August 2017 completes the transposition of the CSR Directive (Directive 2014/95/EU on the publication of non-financial information by companies) initiated by Order No. 2017-1180 of 19 July 2017 on the publication of non-financial information by certain large companies and certain groups of companies. This decree specifies the thresholds above which certain companies are required to produce the extra-financial performance declaration, as well as the content and presentation methods of this declaration (risks, policies, key performance indicators).

- For companies whose securities are admitted to trading on a regulated market, the declaration is compulsory from 20 million for the balance sheet total or 40 million for the net turnover, and 500 for the average number of permanent employees during the financial year;
- For companies whose securities are not admitted to trading on a regulated market, the declaration is mandatory from 100 million for the balance sheet total or 100 million for the net turnover, and 500 for the average number of permanent employees during the financial year.

It also indicates the thresholds from which the information produced under this non-financial performance declaration must be verified by an independent third party. To this end, it amends certain articles of the Commercial Code. These new provisions apply to reports relating to financial years beginning on or after 1 September 2017.

THEORETICAL LENS AND HYPOTHESES DEVELOPMENT

The Value Relevance of CSR Disclosure

CSR, being a relatively new criterion used to assess the position and role of companies in society, has in recent years come from the periphery to the centre of collective consciousness. Many actors, commonly referred to as 'stakeholders', have emerged on the new social scene and have assigned themselves certain roles that are often in opposition to the company. The term was popularised by Freeman and Reed (1983) who gave it a very broad meaning: "A stakeholder is an individual or group of individuals who may affect or be affected by the achievement of organizational objectives".

The purpose of this theory, like most other theories in the field of economics, is to maximise a certain output (positive) or to minimise it (if it is negative). However, there is a third possibility. Taking into account the interests of others, the company can not only reduce business risks, but also, through dialogue, discover new business opportunities and thus launch new development programmes (Freeman & Reed, 1983). The stakeholder theory is being constructed and defined in the same way as the concept of CSR. This theory implies long-term thinking. The company that puts this concept into practice focuses on maximising economic and social benefits in the long term, and not just on social benefits in the long term and short-term profit creation.

As a result of the complex structure that characterises the relationship between stakeholders, many scholars (Lamberg et al., 2003) saw a challenge in developing organisational theories that could help leaders find adequate solutions in their daily work. It was when faced with situations where one or more participants no longer wanted, or categorically refused, to negotiate that it was proposed. The stakeholder theory is intended primarily for managers. It guides them to put their actions into practice, to respect the interests of all stakeholders in decision-making, and to create economic social values.

In the area of CSR, the literature agrees that legitimacy theory is the most widely used theoretical perspective in these studies. As mentioned above, many researchers have used the legitimacy theory to explain different contexts.

The study by Guthrie and Parker (1989) is one of the first empirical studies to use legitimacy theory. In their research, they analysed 100 years of social disclosures by a dominant company, the Broken Hill Proprietary Company Ltd. (BHP), in the Australian mining industry, and attempted to evaluate the evidence of disclosure for the legitimacy theory explanation. Lastly, they concluded that "the analysis failed to confirm that the legitimacy theory was the main explanation for CSR in this particular company case".

O'Dwyer (2002), in an Irish context study, analysed managers' perceptions of CSR reporting and whether CSR reporting would be a successful legitimisation strategy. He argued that for contextual reasons, CSR reporting cannot be considered a successful legitimisation strategy.

More profoundly, Chu et al. (2013) tested the legitimacy theory by investigating the factors that determine greenhouse gas reporting in Chinese companies listed on the Shanghai Stock Exchange. They examined the annual reports and CSR reports of the top 100 A-listed companies using the content analysis technique. In line with the expectations of legitimacy theory, they found that most companies report only neutral and good news, although relevant negative news exists because "large companies operating in a sector with higher levels of carbon dioxide emissions tend to have higher levels of greenhouse gas disclosure".

De Villiers and Van Staden (2006) used the legitimacy theory to explain the reasons for the reduction in environmental disclosures in the South African context. They used content analysis to examine environmental disclosures in South African listed companies, using 140 annual reports over a nine-year period. Reasons for the observed reduction in disclosures are explained as a matter of legitimising behaviour and, ultimately, they conclude that "legitimizing objectives can also be served by changing the type (general/specific) or reducing the volume of environmental disclosures".

The relationship between CSR and firm value has been the subject of intensive research in recent years.

El Ghoul et al. (2011) have examined the effect of CSR information (measured using KLD data) on the cost of equity for a large sample of US companies. The authors found that companies with a higher CSR score have a lower cost of equity.

More recently, De Klerk and De Villiers (2012) have used the modified Ohlson model to scrutinise the role of corporate social responsibility reporting in providing relevant shareholder information value for 100 South African firms. The authors found a positive association between share prices and CSR disclosures.

Gregory et al. (2014) have examined the association between CSR disclosures (data from the KLD) and firm value, and found in general, that disclosures about CSR strengths are valued positively and disclosures about CSR concerns are valued negatively.

Jain et al. (2016) studied if investors take ESG information into account in their investment decisions. Their results provide evidence that firms' market value and future financial performance (as measured by price per share, return on equity, and return on assets) are lower, while operational risk is higher for firms with low ESG composite scores.

Similarly, Miralles-Quiros et al. (2017) have scrutinised if CSR disclosure, in line with GRI, provides relevant information and additional value to investors in stock markets in selected European countries over the period 2001-2013. The outcomes showed that European investors as a whole valued this type of information, especially in the years before the international financial crisis, although there are differences between markets.

Bose et al. (2020) studied the value relevance of CSR expenditure of Bangladeshi banks from 2007-2014, in response to a regulatory directive on banking firms' engagement in CSR activities. They found a positive association between CSR expenditure and a firm's market value.

Eventually, Paolone (2021) analysed the value relevance of financial and environmental information provided by Italian non-financial listed companies after the implementation of Legislative Decree 254/2016. The authors argued that accounting information is not sufficiently capable in explaining value relevance and should be integrated by a set of environmental information.

Therefore, we put forward the following hypothesis:

H1: There is a positive relationship between CSR disclosure and firm value.

The Moderating Role of Board Gender Diversity

The academic community has shown growing interest in the incorporation of women on boards and their significant role in companies (Torchia et al., 2011). This section focuses on agency and stakeholder theories to develop a theoretical framework for understanding the influence of women in the relationship between CSR and firm value.

Agency theory posits that the disparity of interests between managers and owners can lead to information asymmetries between the parties, as owners tend to delegate their responsibilities to managers to make strategic decisions on their behalf, leading to agency problems (Jensen & Meckling, 1976). In this light, shareholders may demand more control mechanisms to monitor managers to reduce agency costs, such as external audits and CSR disclosure (Martínez-Ferrero et al., 2015).

In this line of thought, agency theory assumes that boards with women can act as a mechanism for supervising and controlling board activities, and mitigating agency costs and information asymmetries (Adams & Ferreira, 2009), as their presence on corporate boards increases board independence (Carter et al., 2003; Reguera-Alvarado et al., 2017).

Female boards have acquired high levels of education, such as masters and other post-graduate degrees, and are therefore considered highly professional and experienced (Solimene et al., 2017) in making important decisions. Their results provide evidence that women on boards affects firm value (Pucheta-Martínez & Bel-Oms, 2016; Terjesen et al., 2016) and CSR disclosure (Rao & Tilt, 2016; Liao et al., 2017).

Stakeholder theory states that managers should consider the interests of all stakeholders in the company. Freeman and Reed (1983) define stakeholders as “those persons or groups who can influence or affect the achievement of company’s objectives”. However, it is very difficult to take into account the interests of all stakeholders. Managers need to develop relationships, inspire their stakeholders, and create communities where everyone strives to achieve firm value.

In this light, the main role of company boards is not only to maximise stakeholder value, but also to extend stakeholder loyalty (Rose, 2004). However, the pressure for companies to appoint women to boards comes from shareholders, politicians, consumers, and institutional investors (Fields & Keys, 2003).

The inclusion of minority groups on boards, such as the presence of women, can indicate the commitment of companies to stakeholders. In this way, a mixed group can monitor the behaviour of directors and satisfy the demands of different stakeholders, as gender diversity can bring different perspectives and encourage effective board oversight (Jimeno & Redondo, 2008). Therefore, the incorporation of women on corporate boards can be beneficial for stakeholder relations. This leads to the following hypothesis:

H2: Board gender diversity affects the relationship between CSR disclosure and firm value.

RESEARCH METHODOLOGY

Sampling and Data Collection

In line with Decree n° 2017-1265 of 9 August 2017, we focus particularly on companies whose securities are admitted to trading on the French regulated market (companies mentioned in Article L. 225-102-1, paragraph 1) for the period 2017-2019. They are required to produce a non-financial statement. The new disclosure requirements apply to companies meeting the following criteria (art1): 20 million for the balance sheet total, 40 million for the net sales, and 500 for the average number of permanent employees during the year.

After considering only the companies mandated to implement the new regulation, we drew from the CAC All-Tradable index a list of 49 listed companies that met the criteria. Finally, we excluded 12 financial companies due to the specificity of their accounting methods. Table 1 illustrates the sample selection process.

Table 1: Sample Selection Process

Sample Selection	Number of Companies
Companies submitted to the legislative Decree n° 2017-1265	49
Financial companies	12
Total companies	37
Number of observations (2017-2019)	111

Table 2 shows the distribution of companies in the sample by industry. The industry is determined using the first two digits of the North American Industry Classification System (NAICS).

Table 2: Distribution by Industry

Industry	Freq.	Per cent	Cum.
Construction	9	8.11	8.11
Manufacturing	54	48.65	56.76
Mining	3	2.70	59.46
Retail Trade	12	10.81	70.27
Services	12	10.81	81.08
Transportation & Public Utilities	18	16.22	97.30
Wholesale Trade	3	2.70	100.00
Total	111	100.00	

Variable Selection

This study focuses on a research question, where the variables of interest, firm value, and CSR, play in turn the role of the dependent variable, with the presence of women on boards as a moderating variable. We also add leverage, profitability, and firm size as control variables.

CSR Disclosure Measures

In this study, we apply a qualitative approach. CSR reporting is disclosed qualitatively in the companies' annual report or in separate reports, such as integrated and sustainability report (Veltri et al., 2020). Therefore, we create an index of NF disclosure as required by the Decree n° 2017-1265. According to Nekhili et al. (2017), we began by constructing a scale of measures comprising various items related to the Decree. Each item corresponds to a dimension of the extra-financial statement, and each sub-item represents a societal action. Then, we built an index as the percentage of the total score allocated to the maximum score (the sum of the relevant items presented in Table 3). The CSR disclosure is measured as follows:

$$CSR\ disclosure\ index = \sum_{t=1}^{nj} X(IJ) \Big/ n(j)$$

Where, $n(j)$ represents the number of items; $X(IJ) = 1$ if the item is disclosed and 0 if the item is not disclosed.

Table 3: CSR Disclosure Items in the Light of the French Decree

Items	Sub-Items
1. Labour information	• Employment • Work organisation • Health and safety • Training • Equal treatment
2. Environmental information	• General environmental policy • Pollution • Circular economy • Climate changes
3. Community information	• Community commitments to sustainable development • Sub-contracting and suppliers • Fair practices
4. Anti-corruption information	--
5. Information on human rights actions	• Promotion of and respect for the provisions of the core conventions of the International Labour Organisation • Other actions in favour of human rights

Firm Value

The most well-known of value relevance models aimed at formalising the relationship between book values and firm value is OM (1995). This model provides a sound theoretical framework for market valuation based on fundamental accounting variables (capital and income), as well as other types of information that may be relevant for predicting firm value.

Many empirical studies have also omitted normally unobservable "other information" variables or assumed that it enters the estimation process of empirical model as a component of the intercept term. They also use scaled data per share, which is a natural starting point for the calculation of residual income.

$$P_t = \beta_0 + \beta_1 BVPS_t + \beta_2 EPS_t + \varepsilon_t$$

Where, P is the share price, BVPS is the book value per share, and EPS is the earnings per share.

The Moderator Variable: Gender Diversity on the Board (BGD)

The proportion of women on a board is determined by the percentage of women on the board (number of women on the board/total number of directors). This measure is most widely used in comparable studies (Velte et al., 2020). It overcomes the limitations of the binary measure of women's presence and the number of women on the board (Boukattaya & Omri, 2021). For example, the binary measure does not consider participatory dimension of women on boards and their representativeness. Furthermore, the number of women does not consider the size of the board, and therefore, does not provide information on the possible empowerment of women.

Control Variables

We include leverage (LEV) as a control variable, as more leveraged firms are likely to have better sustainability activities and practices (Orazalin & Mahmood, 2018). The leverage of the company is measured by the debt/equity ratio.

Then, we measure firm profitability (PROF) as the ratio of net income to total assets, following Kartikasari and Merianti (2016).

Finally, we add firm size (SIZE) as the natural logarithm of the total assets. The explanation put forward is that larger companies are more mature and attract the attention of stakeholders, and are therefore obliged to respond in a direct way to stakeholder demands (Brammer et al., 2006).

Valuation Model

In line with market accounting research (De Klerk et al., 2015; De Villiers & Marques, 2016; Cordazzo et al., 2020), we conduct a multivariate analysis using the Ohlson model (1995). In this study, we use a stock price specification of the Ohlson model that relates the stock price to book value of equity and earnings to assess the value relevance of accounting information.

Our basic valuation model (Hypothesis 1) is presented as follows:

$P_{it} = \beta0 + \beta1{*}EPS_{it} + \beta2{*}BVPS_{it} + \beta3{*}ICSR_{it} + \beta4{*}LEV + \beta5 + \beta6{*}PROF + \beta7{*}SIZE + \text{INDUSTRY effect} + \text{YEAR effect} + \varepsilon_{it}$
(MOD A)

Where, P_{it} is the stock price of firm i at time t; EPS_{it} is the earnings per share of firm i at time t; $BVPS_{it}$ is the book value per share of firm i at time t; ICSR is the CSR disclosure index i at time t; LEV is leverage i at time t; PROF is profitability i at time t; and SIZE is firm size.

We then extend our model to determine whether CSR disclosure is associated with higher share prices for firms with gender diversity on their boards (Hypothesis 2).

$Pit = \beta0 + \beta1{*}EPS_{it} + \beta2{*}BVPS_{it} + \beta3{*}ICSR_{it} + \beta4{*}LEV + \beta5 + \beta6{*}PROF + \beta7{*}SIZE + \beta8{*}BGD + \beta8{*}(BGD{*}ICSR) + \text{INDUSTRY effect} + \text{YEAR effect} + \varepsilon it$

(MOD B)

Where, BGD is board gender diversity and BGD*ICSR is the interaction term.

Table 4: Description of Variables

Variable	Description
Firm value (p)	Natural logarithm of market value per share
Book value per share (BVPS)	Natural logarithm of book value per share
Earnings per share (EPS)	Natural logarithm of earnings per share
CSR disclosure index (ICSR)	CSR disclosure index
Board gender diversity (BGD)	The percentage of women on the board
Interaction Term (BGD*ICSR)	
Profitability (PROF)	Natural logarithm of PROFITABILITY
Leverage (LEV)	Natural logarithm of LEVERAGE
Firm size (SIZE)	Natural logarithm of total assets

EMPIRICAL RESULTS

Descriptive Statistics

Descriptive analysis was performed using STATA 13 software. Table 5 presents the descriptive statistics for the share price specification of the modified OM (1995) model. The average share price of the companies in the sample is −3.054 (with an SD of 1.12). The maximum share price is −0.636 and the minimum is −5.591. The average book value per share is 3.241 (SD 0.863) with a maximum of 4.811 and a minimum of 1.132. The average earnings per share of the sample companies is 0.933 (SD of 1.303), with a maximum of 3.384 and a minimum of −3.54.

The CSR disclosure index has a mean score of 0.968, with a maximum of 1 and minimum of 0.6. In addition, board gender diversity has a mean percentage of 41.668, with a maximum of 63.64% and a minimum of 18.18%.

The mean of leverage is 0.095 and the mean of profitability is −3.714. Leverage has a maximum score of 3.717 and a minimum score of −3.077, while profitability has a maximum score of −1.937 and a minimum score −7.773. In addition, the mean of firm's size is 17.71 (SD of 0.668), with a maximum of 19.528 and a minimum of 16.308.

Table 5: Descriptive Statistics

Variables	Obs.	Mean	Std. Dev.	Min	Max
MVPS	111	−3.054	1.120	−5.591	−0.636
BVPS	111	3.241	0.863	1.132	4.811
EPS	110	0.933	1.303	−3.54	3.384
ICSR	111	0.968	0.073	0.600	1
BGD	111	41.668	8.731	18.18	63.64
LEV	111	0.095	1.177	−3.077	3.717
PROF	109	−3.714	0.984	−7.773	−1.937
SIZE	111	17.710	0.668	16.308	19.528

Note: MVPS: market value per share; BVPS: book value per share; EPS: earnings per share; ICSR: CSR index; BGD: board gender diversity; LEV: leverage; PROF: profitability; SIZE: firm size.

In linear regressions, multicollinearity among the explanatory variables can bias the estimation of the regression coefficients and make the statistical tests performed to validate the regression results ineffective. Tabachnick et al. (2007) indicate that statistical problems created by collinearity and singularity can arise from a bivariate correlation of 0.90 and above. The values of the correlation coefficients show that there is no serious problem of multicollinearity, as all correlation coefficients are below 0.90. Thus, we must ensure that the explanatory variables are not highly correlated with each other. To check this, we perform a correlation analysis between the explanatory variables using pair-wise correlation.

Table 6: Pair-Wise Correlations

Variables	(MVPS)	(BVPS)	(EPS)	(ICSR)	(BGD)	(LEV)	(PRO)	(SIZ)	VIF
MVPS	1.000								
BVPS	0.828***	1.000							2.152
EPS	0.705***	0.624***	1.000						1.753
ICSR	−0.018	−0.148	−0.183*	1.000					1.07
BGD	0.314***	0.255***	0.167*	−0.015	1.000				1.181
LEV	−0.257***	−0.229**	−0.115	0.043	−0.126	1.000			1.245
PROF	0.603***	0.585***	0.458***	−0.039	0.116	−0.415***	1.000		1.87
SIZE	−0.170*	−0.039	−0.116	0.104	−0.199**	0.118	−0.162*	1.000	1.141

***$p < 0.01$, **$p < 0.05$, *$p < 0.1$

Note: MVPS: market value per share; BVPS: book value per share; EPS: earnings per share; ICSR: CSR index; BGD: board gender diversity; LEV: leverage; PROF: profitability; SIZE: firm size.

Table 6 presents the correlation matrix containing the correlation coefficients between the variables in our data set. We observe that all correlations are significant. With correlation coefficients of 0.828 and 0.705, stock prices are highly correlated with BVPS and EPS, respectively, in line with the value relevance approach, suggesting that these variables should be highly correlated.

The FIVs of all variables (BVPS, PROF, EPS, LEV, BGD, SIZE, and ICSR) are between 2.152 and 1.07. The tolerance value of all variables is between 0.465 and 0.935. As no variable has a FIV value greater than 10 and a tolerance value less than 0.1, we can conclude that there is no multicollinearity between the independent variables in this regression model.

As all regressions used were based on panel data, the application of the Hausman test seems to be mandatory to distinguish individual fixed-effects from random-effects. The fixed-effects model is more appropriate than the random-effects model. Then, we use the Breush-Pagan and Wooldridge tests to check the existence of heteroscedasticity and autocorrelation problems. Our results reveal heteroscedasticity and autocorrelation of the models. This problem will be addressed with the use of robust tests in STATA.

RESULTS AND DISCUSSIONS

Based on the first assumption, we specify model 1 in the post-legislative application and with reference to non-financial disclosure in this period. The adjusted R2 is above 23.22% in this model (see Table 7). In other words, the variation in the independent variables used in the model can explain 23% of the variation in the dependent variable, while the remaining 77% is influenced or explained by other variables not included in this research model. Hence, firm value (MVPS) is the dependent variable and the CSR disclosure index, BVPS, and EPS are the independent variables. Leverage, profitability, and company size are the control variables.

In model 1, the coefficients for EPS and BVPS have a significant and positive relationship with the market value per share at the 1% level, suggesting that the accounting information is value-relevant and facilitates investment decisions. Therefore, investors should value accounting information (Slack & Campbell, 2008; Reverte, 2016).

Overall, these findings support the idea that CSR information helps market participants' forecasts. These results are more value-relevant and statistically significant at the 10% level. The findings of this study are in accordance with the signal theory, that is, companies which disclose CSR information send a positive signal to investors (Spence, 1978). For investors, companies that publish CSR information in the annual report or sustainability report are considered more valuable, because it means that the company takes responsibility for the negative impacts generated by its operational activities. Thus, if the company discloses its CSR activities in an optimal way, it will trigger an increase in investment opportunities, providing a positive signal about the company's prospects, and thereby increasing its value. Consequently, companies are required to disclose all information to external parties, both financial and non-financial, to increase the value of the company, translating into changes in the company's share price, as the market reacts to this information as a signal. The results of this study are in line with Hu et al. (2018), Fatemi et al. (2018), and Mishra (2017). These outcomes support our first assumption of the positive relationship between CSR disclosure and firm value. However, they are contrary to the results obtained by Cordazzo et al. (2020), who found a negative association between ESG disclosure and firm value after the transposition of Directive 2014/95/EU in Italy. Hummel (2020) also suggests that when firms moved from voluntary to mandatory reporting, following the announcement of Directive 2014/95/EU, the association between their share price and CSR disclosure became significantly negative.

Table 7: The Impact of CSR Disclosure on Firm Value

MVPS	P-Value		
BVPS	0^{***}		
EPS	0^{***}		
ICSR	0.071^{*}		
LEV	0.266		
PROF	0.024^{**}		
SIZE	0^{***}		
YEAR effect	Yes		
INDUSTRY effect	Yes		
Constant	0.643		
23.22%			
Mean dependent var.	−3.034	SD dependent var.	1.128
Number of obs.	107	Chi-square	2860.515

***p < .01, **p < .05, *p < .1

Note: MVPS: market value per share; BVPS: book value per share; EPS: earnings per share; ICSR: CSR index; LEV: leverage; PROF: profitability; SIZE: firm size.

Table 8 presents the results of the regression analysis for equation (2). In this analysis, we add a dummy interaction for BGD to the CSR disclosure index. The adjusted R2 is above 26.73% in this model.

We observe a positive association of the dummy interaction of BGD and the CSR disclosure index with firm value at the 5% significance level. The introduction of the dummy interaction of BGD with ICSR increases the significance level of our variables. CSR becomes significant at the 1% level of control variables, excepting leverage. These relationships support Hypothesis 2 that board gender diversity affects the relationship between CSR disclosure and firm value.

Furthermore, board gender diversity has a significant and positive relationship with firm value at 1% level of significance. This positive relationship is consistent with the results of Adams and Ferreira (2009), who found that female board representation increases firm performance due to better monitoring, consequently increasing firm value. In addition, increased female board representation improves corporate reputation, and consequently, firm value (Bear et al., 2010).

In addition, the representation of women on boards increases the level of CSR disclosure at the level of 1%. Gender diversity on the board is a value driver, and companies with female board members have a significantly higher CSR disclosure score than companies without. These findings are in line with Hillman et al. (2002), Boulouta (2013), Harjoto et al. (2015), and Jain and Jamali (2016). Women may influence the board to think more broadly about socially responsible business practices and to consider a wider range of stakeholders (Tourigny et al., 2017). Due to their psychological and emotional characteristics, women show greater sensitivity to the interests of others and try to understand the multiple perspectives of stakeholders (Harjoto et al., 2015). Women directors often have more diverse professional backgrounds and experiences than men (Vinnicombe, 2009). This may lead female directors to better connect with stakeholders and become more oriented towards CSR practices.

Table 8: The Moderating Role of Board Gender Diversity

MVPS	P-Value		
BVPS	0^{***}		
EPS	0^{***}		
ICSR	0.005^{***}		
BGD	0.007^{***}		
BGDICSR	0.017^{**}		
LEV	0.692		
PROF	0.002^{***}		
SIZE	0^{***}		
YEAR effect	Yes		
INDUSTRY effect	Yes		
Constant	0.013^{**}		
R^2: 26.73%			
Mean dependent var.	−3.034	SD dependent var.	1.128
Number of obs.	107	Chi-square	2059.201

$^{***}p < .01$, $^{**}p < .05$, $^{*}p < .1$

Note: MVPS: market value per share; BVPS: book value per share; EPS: earnings per share; ICSR: CSR index; BGD: board gender diversity; BGD*I.CSR: interaction term; LEV: leverage; PROF: profitability; SIZE: firm size.

Regarding control variables, we observe a positive association between leverage and firm value (p = 0.266 > 0.05).

Our results show a positive association between PROF and share price. Following the perspective of Spence's (1978) signal theory, it is explained that a high level of profitability reflects a good value of the firm, which will encourage stakeholders to invest in it, thus increasing its value. This research is also in line with the research of Hapsoro and Falih (2020), who suggested that profitability has a positive and significant effect on firm value.

Similarly, firm size positively affects firm valuation (share price) at the 1% level ($P = 0 < 0.05$). The size of the company reflects the total value of the company's assets. This influences the investor's expectations of the company's dividends. An increase in the demand for the company's shares will be able to stimulate a rise in the share price in the capital market. This share price rise shows that the companies are considered to have a higher "value" (Hirdinis, 2019).

IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

The transposition in France of Directive 2014/95/EU provides a new framework for non-financial reporting and marks a major turning point towards increased accountability of the large companies' management bodies' members (Malecki, 2018). The Directive has achieved similar levels of corporate transparency on social and environmental issues, as well as increasing trust and encouraging more sustainable corporate behaviour.

According to the relevant literature, the move to a mandatory diet may increase the level of information available on the market. Indeed, the French legislative decree requires companies that do not voluntarily provide non-financial information to disclose this information, to comply with the law.

To gauge the relevance of the value of non-financial information disclosed after the implementation of the legislative Decree, we construct a specific disclosure index to assess CSR. The index includes the issues required by the French Decree: environmental performance, social and employee issues, human rights performance, and corruption and anti-bribery issues. For this reason, we used a modified OM (1995), where non-financial information is added to the basic model as a proxy for non-accounting information. To carry out our study, we have drawn from the CAC All-Tradable index a list of 49 listed companies that meet the criteria of the abovementioned French decree for the period 2017-2019 (the period of application of the Directive).

This research has found a significant positive relationship between CSR disclosure and firm value, explaining the importance of social responsibility disclosure in the pursuit of business activities and the relevance of this information in investors' decision-making. This is in accordance with previous research by Mishra (2017), Hu et al. (2018), and Fatemi et al. (2018).

Overall, we evince a moderate increase of board gender diversity on the relationship between CSR disclosure and firm value. Our study is based on the assumptions of agency theory and stakeholder theory that the presence of women on the board of directors, due to their unique psychological characteristics, leadership styles, diversity of professional experience, and ethical values, has a strong influence on CSR issues and allows for a better response to stakeholder demands.

Our study makes relevant contributions to the existing literature. To the best of our knowledge, this is the first attempt to study the impact of the EU directive on the relevance of CSR disclosures in large French companies. Thus, the study highlights the role of gender diversity on the board of directors in the new context of non-financial reporting and the relationship between CSR disclosure and firm value in France. Eventually, our results will encourage companies to adopt the EU directive guidelines and focus on social responsibility to improve their valuation.

Nevertheless, a few shortfalls need to be considered. On the theoretical perspective, the choice of variables and their conceptualisation may not reflect the reality under study. Furthermore, the measures used may influence the obtained results. For a better explanation, we can then consider other control variables, such as ownership structure, CEO duality, and corporate governance mechanisms. Thus, many factors, such as the industry's sensitivity can affect this relationship (De Klerk et al., 2015).

Although this study is based on large companies listed on the CAC All-Tradable index, increasing the sample size (unlisted firms) could be an opportunity to improve the generalisability and robustness of the research. Future studies should investigate the implementation of the EU directive by focusing on other EU member states.

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