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Evidence of the benefits of women's increased participation in the Board of Directors (BoD) and senior management in Mexican stock exchange-listed companies

Demostración del beneficio de una mayor participación de la mujer en el consejo de administración y la alta dirección de las empresas mexicanas que cotizan en bolsa

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Abstract

In the present paper, we test the benefit of a higher presence of women on the board of directors or the senior management in Mexican exchange-traded companies. To perform our tests, we used panel data regressions with data from 2011 to 2019 (measuring the impact of the COVID-19 pandemics). We used the historic profitability (ROE), the general and pillar ESG scores, and the percentages of women in senior management and the board of directors. We found a positive and significant relationship between profitability and governance score and women's participation in senior management. We found that for each 1% increase in women's participation in senior management, the ROE increases by 0.27%.

JEL Code: G10, G11, J16, J24
Keywords: socially responsible investment; women inclusion in business; mexican stock exchange; ESG

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Resumen

En el presente trabajo se revisa el beneficio que tiene el hecho de que exista una mayor participación de la mujer tanto en consejo de administración como en la alta dirección de las empresas que cotizan en la bolsa mexicana de valores. Se realizaron modelos de regresión, con datos panel anuales del año 2011 al 2020 (midiendo por partes el efecto de la pandemia por COVID-19), para estimar la relación participación de la mujer-rentabilidad. Esto se hizo con información histórica de las empresas cuyas acciones son o han sido miembro del índice de precios y cotizaciones (IPC), utilizando las variables rentabilidad (ROE), calificación ESG, calificaciones por pilares de ESG, el porcentaje de mujeres en el consejo de administración y el porcentaje de mujeres en la alta dirección. Los resultados muestran que existe una relación positiva y significativa de la rentabilidad con la calificación de gobierno corporativo y la participación de la mujer en la alta dirección. Por cada 1% adicional de participación de mujeres en la alta dirección, se incrementa el ROE en un 0.27%.

Código JEL: G10, G11, J1, J24
Palabras clave: inversión socialmente responsable; participación de la mujer en la empresa; Bolsa Mexicana de Valores; rentabilidad; ESG

Introduction

Corporate Social Responsibility (CSR) is a practice that has gained interest by initiating a debate among advocates of the relationship between a company and its stakeholders (Clarkson, 1995; E. Freeman, 1984; Post, Preston, & Sachs, 2002) through recognized promoters of the exclusive interests of shareholders, as in the case of Milton Friedman (2007).

CSR has gone through many different stages since it started. Even its origin is controversial. For some authors, the concept of CSR was born in the 1920s with the publication of Oliver Sheldon's The Philosophy of Management (2004), which states that the basic responsibilities of business management are social (Mozas-Moral & Puentes-Poyatos, 2010). For other authors, the work "The Social Responsibilities of Businessmen" by Howard R. Bowen (1953) is the starting point as it mentions the obligations that businessmen should fulfill concerning the values of the society in which they carry out their business activities. This work is considered to be the origin of the CSR concept. During the 1950s in the United States, CSR was presented as actions of a charitable nature and economic donations within companies' strategy to influence stakeholders (Navarro, 2012; Truño & Rialph, 2007). The 1960s saw an evolution of the idea that CSR recognizes the existence of a relationship between business and society beyond the mere economic obligations of companies (Davis, 1960; Davis & Blomstrom, 1968; Frederick, 1960; McGuire J. W., 1963; Walton, 1867).

It was not until the 1980s, with studies such as those by Carroll (1983; 1979), Freeman (1984), or Wartick and Cochran (1985), that CSR research began to propose theories, models, and alternative

terms such as public responsibility, social sensitivity, business ethics, and stakeholder theory (Mozas-Moral & Puentes-Poyatos, 2010).

Such theories were developed in the 1990s, when the study of CSR began to explore the stakeholder theory with authors such as Freeman (1984; 1994), Donaldson and Preston (1995), Mitchell, Agle and Wood (1997), and Rowley (1997).

As a result of the evolution of CSR, there has been a parallel process of evolution in the way investors think about so-called "socially responsible investment" (SRI) or ESG investment (corporate environmental, social, and governance, the 3 pillars of CSR). This is an interesting evolution, with antecedents in religious and moral precepts, as reported by Derwall et al. (2011).

Events such as the Vietnam War and other wars, environmental disasters of all kinds, financial scandals due to corporate governance failures, or social events such as social uprisings, migratory flows, or the growing awareness of inequity toward women have been factors that have motivated the practical and conceptual evolution of SRI. This last aspect of its evolution (reducing inequity toward women) is precisely this study's theoretical basis or leitmotiv. This paper aims to prove and quantify the profitability benefit of having high levels of gender equity in the top management and the BoD of companies listed on the Mexican Stock Exchange (BMV; Spanish: Bolsa Mexicana de Valores).

At this point, it is important to note that the term socially responsible investing, ESG investing, or related terms in the literature will be taken as synonyms (Eccles & Viviers, 2011).

The SRI compliance and development levels can be studied and even quantified using indicators, ratings, or scores that external evaluation companies carry out on the company of interest. The most common rating methodology in the financial markets is the one that quantifies the level of compliance with social responsibility in three dimensions: environmental impact, social impact, and quality of corporate governance. This methodology is commonly known as ESG for the acronym of each pillar: Environmental, Social, and Governance (ESG).

Examples of these external companies are Standard & Poor's Dow Jones Indices with Robbeco-Sam, and MSCI ESG indices with KLD or Refinitiv (2019a). The latter was formerly the financial reporting division of Thomson Reuters (Thomson-Reuters, 2019) and will be the quantitative context for CSR valuation in the present work.

The main reason for this choice is that it is freely available to users of the Eikon service (Refinitiv, 2021), formerly Thomson Reuters. Escrig-Olmedo et al. (2019) suggest that this methodology has some limitations in the representativeness of ESG measurement. Despite this, they note that it is the methodology that most companies use worldwide and the one that has the greatest access to the ESG portfolio investment decision-making process.

Within Refinitiv's corporate governance dimension, three dimensions are measured, grouping 123 items or indicators that Refinitiv analysts measure in each company. These are the management quality score, the shareholder relations score, and the score of the CSR strategy implemented by senior management.

Of these three dimensions, the management quality score is precisely one of the areas of interest since it includes the indicator of the percentage of women who are part of the company's Board of Directors. On the other hand, the social pillar is comprised, in part, of the percentage of women who are managers or senior executives within the organizational structure. This item belongs to the dimension of quality and working conditions.

Given the increasing—and imperative—attention to the important role of women in business and society, the question arises as to whether there is a positive relationship between company profitability and having a higher percentage of women on the board and in senior management. The position in this paper is that such a relationship exists and that more women on the board or senior management leads a company to be more inclusive and profitable.

The theoretical starting point for this paper is Friedman's (2007) criticism of CSR concerning the negative impact of CSR on profitability. In a complementary way, the present work is positioned in a theoretical situation contrary to the reviews that have shown the potential poor performance of SRI stocks compared to "sinful" or "non-ESG" stocks (Hong & Kacperczyk, 2009).

Given the position in favor of having greater gender equity in companies' top management and Board of Directors, the following working hypothesis is presented:

"The profitability of companies listed on the BMV is higher if these have a greater inclusion of women in their BoD and at their highest management levels."

The practical implications of the results of these tests are that individual or institutional investors can give preference to investing their portfolio in shares of companies with high standards of gender inclusion and engage in a form of activism in these companies by motivating a true inclusion of women in managerial roles in the companies in which they invest.

The reason for testing the previous hypothesis lies in the need to demonstrate the benefits of greater participation of women in the different managerial and operational areas of companies. Today, there is a widespread desire for greater inclusion of women in productive activities. In addition to this desire, there is an economic need to open professional spaces for women. This is because, regarding decision-making and consumption, women play an important role in consumption and aggregate demand. In other words, the intellectual capacity of women can add significantly to the human capital of companies and economies to make them more productive and profitable, and if women have access to higher levels

of consumption, aggregate demand in an economy will be greater and more sustained, as a greater number of economic agents will be actively participating in productive activity.

Based on this logical and economic reasoning, the two previously mentioned economic benefits and greater participation of women in productive life, this article aims to shed light on the benefits of the first: greater productivity (measured in terms of profitability) in companies, the particular case or object of study being Mexican companies that have shares listed on the BMV.

To prove this working hypothesis, the indicators of participation (percentage) of women on the Board of Directors will be used, as well as the percentage of women who hold the position of deputy directors, directors, deputy general managers, or general managers—that is, the percentage of women, out of these two areas, who participate in such positions in the companies under study (refer to the Appendix for the universe).

These indicators were extracted from the results of Refinitiv's ESG ratings methodology (2019b). In this methodology, around 400 items or indicators are measured, which in turn are grouped into dimensions within each of the three ESG pillars. Of all these items, in the social and corporate governance pillar, there are items dedicated to measuring the participation of women, as well as benefits or human resources policies that encourage greater participation of women or a better working environment and professional development for them. Of all these items, the two mentioned above are of interest because they specifically measure women's participation at these two vital decision-making levels in the company. Other indicators of interest like the percentage of women in hiring and the total percentage of women in all company areas were excluded from this study. This was done for two reasons. The first is that the percentage of women, out of the total number of hires, is a very volatile indicator since there may be years in which the company does not expand its operations. The second reason is that the indicator of the total percentage of women in the company includes other operational areas that are not accurately broken down, such as the percentages of women in senior management or on the BoD. That is, the breakdown of the most operational levels is not detailed or measured by Refinitiv.

Once the theoretical and practical motivations of the work have been established, it is structured as follows: in the next section, a brief but detailed review of the literature that motivates the present work is made. The third section describes the origin and processing of the data and reviews the test results. The last section presents conclusions and recommendations for future research.

Review of the literature that motivated this work

In this section, a general review of the literature on SRI is carried out, which provides a basis for the fact that there are no previous studies (in Mexico or other countries) that review the relation between the level

of profitability of companies listed on the BMV with greater inclusion of women on their BoD and in their highest management levels.

The primary literature measuring the profitability benefits of SRI vs. non-SRI (or conventional investment strategies) will be reviewed as a starting point. In a complementary manner, the works that measure the ESG profitability-score relation will be reviewed, and the specific literature on SRI in Mexico will be studied. Finally, the above review will be linked to the objective of this paper, which is to measure the benefit of greater gender equity (greater inclusion of women) on the BoD or in the top management of the companies under study.

The first papers to study SRI performance were those of Statman (2000), Schröder (2004, 2007), Consolandi *et al*. (2008), and Capelle-Blancard and Coudec (2009). These papers found evidence of the positive performance of SRI stocks and SRI fund portfolios, compared to the performance and results observed in conventional portfolios composed of SRI and non-SRI stocks. Other subsequent papers, such as those by Cornell and Damodaran, A. (2020), La Torre *et al*. (2020), Cornell (2021), Gyöönyörová, Stachoň and Stašek (2021), or Yoo and Managi (2022) also have an impact on this aspect. The finding of this positive evidence regarding the profitability of ESG portfolios has triggered a general debate regarding the benefit for investors in terms of the profitability of this type of investment. Some authors, such as Hong and Kacpersyk (2009), Naffa and Fain (2022), and Yoo and Managi, S. (2022), present evidence against SRI, showing that it is preferable to invest in companies with high social or environmental impacts considered negative. Other authors (Przychodzen, Gómez-Bezares, Przychodzen, & Larreina, 2016) show that the profitability in the performance of shares of companies with high CSR standards is primarily due to a behavioral situation on the part of fund or portfolio managers. That is, the price of shares rises because their demand increases, and this is because the managers of such funds wish to be little affected by the poor performance of their investment caused by environmental, social, or corporate governance controversies (Barko, Cremers, & Renneboog, 2021). The above led Derwall, Koedjik, and Terg Horst (2011) to conduct one of the most detailed studies on the SRI literature. Among their conclusions and empirical evidence is the existence of two theories that model the rational choice of investors who practice SRI:

1. The Theory of the Discarded Shares — This theory suggests that the demand for stocks with high CSR standards is due to investors' desire to be more responsible in their investments. As a result, SRI stocks are expected to rise in price, impacting their profitability (financial and market) due to the increased demand for this type of shares.

2. The Expectation Error Theory — This theory suggests that high CSR quality is not provided for in the stock price. Thus, profitability (financial and market) is expected to be higher in these

types of companies than in cases where their CSR quality is lower (this paper is expected to make positive heuristics to this theory by proving the working hypothesis).

These two theories complement each other since they seek to model the rational behavior of investors who practice SRI. More specifically, for the first theory, it is expected that investors will have a lower return on their investment because managers are not affected by the fact that they prefer to be more responsible, sacrificing profitability. The present work and its proposal of activism in investments see its results as a positive validation. This is because it is to be expected that companies with greater gender inclusion will be more profitable and, consequently, more attractive to socially responsible investors.

Among the possible explanations underpinning the theoretical position of the paper is the fact that higher levels of social responsibility imply higher profits from four sources (Bauer *et al.*, 2021; Chittoor, Kale, & Puranam, 2015; Derwall *et al.*, 2011; Döttling & Kim, 2022; Koijen *et al.*, 2020):

1. Reduced agency costs leading to better financing and operating conditions
2. Increased informational efficiency inside and outside the company
3. Reduced legal and reputational risks and improved sales levels
4. Improved production conditions and working environment

As can be seen, a greater presence of women on the BoD or in top management can be a potential cause of better working and production conditions. Despite this observation, the existence of this factor as a potential cause of this positive relation is beyond the scope of this paper. The objective of this paper is merely to determine whether there is a positive relation between a greater presence of women on the BoD or in top management and profitability.

Some of the works studying the relation between profitability and ESG rating level are those of Galbreath (2013) for Australia; Lee, Cin, and Lee (2016) for Korea; Crifo, Diaye, and Pekovic (2016) for France; Signori, San-Jose, Retolaza, and Rusconi (2021) for Europe; or Dalal and Thaker (2019) for India. These papers find empirical evidence in favor of the positive relation between the level of ESG rating and profitability in publicly listed companies. Analogous to studies on a diverse set of public companies from different countries in North America, Asia, and Europe are the works by Sethi, Martell, and Demir (2017), Xie *et al.* (2019), Azmi, Hassan, Houston, and Karim (2021) for emerging economies, or by Gibson Brandon, Krueger, and Schmidt (2021) for a global scope. Similar to previous work, they find evidence of a positive relation between ESG rating level and profitability. For the case of the United States, the works of Blasi, Caporin, and Fontino (2018), Brogi and Lagasio (2019), and Lisin *et al.* (2022) are some of the most recent to measure this relation with positive results in the same.

These papers investigate and prove the positive relation between the overall ESG rating and its three pillars with profitability. Characteristic of most of these papers, profitability is measured by return on equity (ROE), return on assets (ROA), and price-to-book value (P/BV). Since incorporating P/BV is a

performance metric that incorporates the market price of a stock (its demand), it will not be studied in this paper. The reason for not following this line of study is that the valuation of the price of a stock requires other factors such as exposure to systematic risk (Sharpe, 1963, 1964), exposure to other types of risk factors such as the size of the company and its value (Fama & French, 1992) or even other risk factors such as momentum or inertial movement of the price in the market (Carhart, 1997).

This paper aims to establish a relation between the benefits of greater inclusion of women on Boards of Directors and in senior management and profitability, and for this purpose, the return on equity (ROE) will be used. The rationale for choosing return on equity (ROE) is that this measure results from decisions made by the BoD and senior management. In a complementary manner, it considers profitability based on the company's current capital position. Using this ratio, the evaluation is not based on such capital plus the company's net cash flow expectations, which are assumed to be discounted in the share's market price. Since the market evaluation considers the company's core value—its net cash flow generated and the corresponding profitability—and future expectations, the ROE will be used to express the concept of profitability as a result of the administrative and operational management itself. In addition, in periods of crisis or poor market performance, certain companies see their prices fall due to a systematic market situation and not due to a situation specific to the company and its business environment. That said, ROE is considered a first approximation to measure profitability only in terms of the company's management, free of behavioral issues in the financial markets.

Among the works that measure the relation between ROE, ROA, or P/BV with the level of social responsibility in Mexico are the works of Alonso-Almeida *et al.* (2009), García-Santos and Zavaleta-Vázquez (2019), Godínez-Reyes *et al.* (2021), Miranda-Pegueros and López-Castro (2021), and Godínez-Reyes *et al.* (2022). These studies conclude a positive relation between these two variables and other economic and financial variables such as economic growth, company size, or market risk.

All the previous works motivated the present one as they relate the quality of CSR practices—their ESG score—to the firm's profitability or market price performance. Nonetheless, the literature studying the relation between firm profitability and the presence of women in top management is relatively new. Three recent studies are particularly relevant. First, that of Provasi and Harasheh (2021), which analyzes the relation between gender diversity and corporate profitability with an emphasis on firm sustainability. Second, that of Ozdemir *et al.* (2021), who examine the moderating effect of BoD diversity on the complex relation between corporate ESG responsibility performance and financial performance. They test the study's hypotheses through a fixed-effects regression using data from an international sample of 1 234 companies and 5 102 company-year observations for the period 2009-2013. The study finds evidence that CSR performance and financial performance are positively related, and the magnitude of this relation depends on the BoD's level of diversity. The study also reveals that race and age diversity

factors have an independent moderating effect on this relation. Third, that of Buallay *et al.* (2022), using data from 2 116 publicly traded banks over 10 years (2007-2016) to study the relation between board gender diversity and sustainability reporting. A regression model partially corroborates gender diversity on Boards as a causal factor of corporate governance disclosure to the extent that, when women on the Board represent between 22% and 50% of the board, there is a significant positive effect on the level of ESG disclosure.

From the most representative works at the international level, the study by Dewally, Flaherty, and Tomasi (2017), who measure the influence of company size, educational level, and religious precepts on the inclusion of women in the top management of companies in the United States, can also be cited. Using data from that country's census bureau and RiskMetrics, the authors measured the influence that educational level and level of religiosity in each US state has on gender equity. This was done in a sample of 1 630 companies with data from 1998 to 2008. By applying various statistical techniques—such as logistic regressions—the authors found that women's participation in BoD occurs only with an increase in BoD positions. On the other hand, states with a high level of religiosity tend to have companies with fewer women on the BoD, whereas states with a high level of education positively influence the level of inclusion of women on the BoD.

In a similar perspective to this article, particularly in the type of object of study, there is the work of Huang, Diehl, and Paterlini (2019), who studied the German DAX 30 index member companies from 2010 to 2015. In their study, the authors find that the presence of men on multiple Boards of Directors or with diverse committees tends to reduce the presence of women on them. Similarly, they find that a greater presence of women on these types of Boards of Directors encourages the presence of more women in these positions. Notwithstanding the above, the imposition of legal requirements for greater inclusion of women on Boards of Directors in Germany in 2016 favored such inclusion.

Also in a similar perspective to the present paper, Comi *et al.* (2020) measure the relation between gender equity (presence of women in top management) and profitability in Spanish, Italian, and French public companies. Having only found a statistically significant relation in the case of Italian firms and with data on the type of board structure, the authors found that gender inclusion policies in Italy had a beneficial effect on women's participation in the Italian firms studied and on their corresponding profitability.

Finally, the work of Gutierrez, Fuentes, and Ariza (2014) should not be overlooked. This work is the closest to that of this study in the Mexican case. In it, the authors measured the level of performance of small companies led by women and noted a positive and significant relation between performance and the fact that women lead the companies studied.

After this discussion of references, this paper seeks to extend the cited articles in studying the benefit of the presence of women in the BoD or top management for the financial performance of Mexican companies that are or have been members of the BMV's prices and quotations index (PQI).

Once the theoretical basis and the need for the tests to be performed in this study have been established, a description of the data acquisition and processing method for the tests to be performed will follow.

Methodology

Data source and processing for analysis

With what has previously been described, and given the ESG rating calculation methodology of Refinitiv (2019a), the panel data regressions described in Table 1 will be performed.

The objective is to measure, on an aggregate basis, the impact of the ESG rating on profitability, the disaggregated values of each pillar, the indicators of the percentage of women in the BoD, and the percentage of women in senior management positions. It was a "top-down" approach from a general or aggregate level to a particular one on the two indicators of interest: the percentage of women on the BoD and the percentage of women in senior management positions.

Table 1
Regression models and variable codes of the regressions carried out in the analysis

Variable	Regression 1	Regression 2	Regression 3	Regression 4
Return on equity	ROE (dependent)	ROE (dependent)	ROE (dependent)	ROE (dependent)
ESG rating	ESG			
Environmental Pillar Rating		EnvScore	EnvScore	EnvScore
Social Pillar Rating		SocScore		
Corporate Governance Pillar Rating		GovScore		
Percentage of women on the BoD			WomanBoardDir	
Percentage of women in senior management positions				WomanTopDir

Regression 5	Regression 6	Regression 7	Regression 8
ROE (dependent)	ROE (dependent)	ROE (dependent)	ROE (dependent)
EnvScore			
WomanBoardDir	WomanBoardDir		WomanBoardDir
WomanTopDir		WomanTopDir	WomanTopDir

Source: created by the authors

Data on return on equity (ROE), ESG ratings, and percentage of women's participation in senior management or Board of Directors were obtained from the Refinitiv (2021) databases. These were extracted for companies that, from 1994 to April 2022, have had or have shares listed as a member of the PQI and are actively trading.

For the specific case of ROE, Refinitiv calculates it by dividing the net income for the period (year) by the value of the capital stock of common shares in free circulation. The value of this indicator is expressed as a percentage (10.5 means 10.5%).

Both the historical values of ROE and the value of the variables mentioned in Table 1 were extracted for each company in two periods. The first was from 2011 to 2019, and the second was from 2011 to 2021. 2021 is the year with the most recent records in Refinitiv's databases; the values for 2022 will be published in 2023.

This separation of periods was done to incorporate the negative effect that 2020 and 2021 had on profitability in most companies in Mexico and the world. This was due to the lockdown and drop in economic growth resulting from the COVID-19 pandemic in 2020 and its subsequent recovery period from 2021 to the date of writing this article.

Companies that did not have at least 4 years of ROE information or ESG ratings were excluded from the sample. This threshold was chosen to ensure acceptable variability within the same study unit or company. This led to the development of a balanced panel with the 43 companies set out in the Appendix, which has 4 to 9 years of historical data for 2011-2009 and 4 to 11 years for 2011-2021. This yields a panel with 354 observations as of 2021.

The indicators of the percentage of women on the BoD (WomanBoardDir) and of women in managerial or executive positions (WomanTopDir) are percentages that are measured directly from the information published by the company.

In the two data panels previously described, the eight regressions in the lower panel of Table 1 were run. In order to run them, a regression was first run using the data pooling method. Subsequently, the regression was run with fixed effects—with effect within groups or study units—and a random effects model was run using Baltagi and Chang's estimation method (1994). This method is considered a more appropriate extension to that of Swamy-Arora (1972) for the case of unbalanced panel data regression estimations.

As seen in Table 1, in the regressions in which one or both indicators of women's participation were included in the regression equation, the ratings of the social and corporate governance pillars were excluded. This is because the indicator of women's participation on the Board of Directors belongs to the corporate governance pillar (Gov), and the percentage of women in senior management to the social pillar (Soc). This exclusion of the corporate and social governance pillars made in the regressions mentioned

above was to avoid the potential presence of multicollinearity. To reduce the potential presence of heteroscedasticity and serial correlation in the residuals, the Newey-West (1987) robust estimation method was used in the standard errors of the coefficients.

After reviewing the data processing method and the process of analysis with panel data regressions, a review of the estimation results will be presented.

Review of results

As a starting point, Table 2 presents a statistical summary of the variables studied in the model. This is done without distinguishing the company or year from which it is measured. As relevant data, it can be seen that the average profitability of the companies studied (from 2011 to 2021) is 14.49%, with a standard deviation of 16.71%. The average ESG rating is 47.86%, and the average participation of women in the BoD is only 8.97%, of which only Walmart and Banco Santander have a participation close to 27%. On the other hand, the participation of women in top management positions is only 6.32% on average, with the highest value at the 75% percentile being 10.4%. This suggests the enormous area of opportunity that this segment of companies has in terms of gender inclusion.

Table 2
Statistical summary of the variables of the analysis

Parameter	Mean	Standard deviation	25% percentile	75% percentile
ROE	14.490	16.713	8.372	18.387
ESG	47.869	24.238	27.555	65.470
Env	43.837	29.092	17.024	67.288
Soc	48.144	27.683	20.754	68.788
Gov	50.738	23.667	33.085	71.781
WomanBoardDir	8.974	9.446	0.000	13.561
WomanTopDir	6.324	7.523	0	10.4

Source: created by the authors with data from Refinitiv (2021)

Table 3 summarizes the F and Hausman tests for the eight regression models run with the three estimation methods previously described with differentiated results for the two study periods (2019 and 2021).

As can be seen, the null hypothesis of using a regression pool in the eight regressions at 10%, 5%, and 1% significance levels is rejected. The Hausman tests conclude that, both in the 2019 and 2021 panels, the null hypothesis of consistency between the random effects model and the fixed effects model is accepted. For this reason, the former (random effects) is used in this analysis.

Table 3
Tests of effects of regression models with unbalanced panel data run for analysis

	With data as of 2019		With data as of 2021	
Regression	P-value of F-test	Hausman test P-value	P-value of F-test	Hausman test P-value
Regression 1	0.0000	0.4730	0.0000	0.3651
Regression 2	0.0000	0.3200	0.0000	0.3281
Regression 3	0.0000	0.1654	0.0000	0.1350
Regression 4	0.0000	0.2096	0.0000	0.1046
Regression 5	0.0000	0.3741	0.0000	0.2326
Regression 6	0.0000	0.8819	0.0000	0.9803
Regression 7	0.0000	0.5953	0.0000	0.3896
Regression 8	0.0000	0.7187	0.0000	0.6508

Source: created by the authors with data from the regressions performed and from Refinitiv (2021)

Table 4 presents the results of the random effects model regressions for the unbalanced panel with data up to 2019. Table 5 does the same but with data up to 2021. It can be seen from both tables that the conclusions reached do not change drastically from 2019 to 2021.

As a first result, it can be seen in both tables that the relation between the overall social responsibility rating (ESG) and profitability is not significant. For this reason, this relation cannot be accepted as valid. This conclusion goes against the results of previous works such as Godinez-Reyes et al. (2021) and Godinez-Reyes et al. (2022), who find a significant relation between this rating and the level of efficiency or relative productivity in Mexican (publicly traded) companies in their sample.

When the ESG rating is broken down into its 3 pillars (regression 2), it can be seen that the corporate governance pillar is the only one with a statistically significant relation. For each additional point that a company improves its corporate governance rating, its profitability increases by 0.135%. If a company in Mexico improves its rating in this pillar by 10 or 20 points, an improvement in profits of 1.35% and 2.7%, respectively, is expected. This result is suggested due to the company's better accountability practices, including an improvement in the gender equity profile of its BoD.

Table 4
Regression with unbalanced panel data to 2019

	Dependent variable: ROE							
	Regression							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant (Alpha)	14.915***	12.280***	15.391***	14.674***	14.213***	14.036***	13.360***	12.873***

	(1.904)	(2.166)	(1.516)	(1.659)	(1.645)	(1.092)	(1.185)	(1.251)
ESG	0.0003							
	(0.034)							
Env		-0.056	-0.042	-0.033	-0.042			
		(0.072)	(0.031)	(0.025)	(0.031)			
Gov		0.135***						
		(0.050)						
Soc		-0.042						
		(0.074)						
WomanBoardDir			0.149		0.105	0.105		0.063
			(0.104)		(0.110)	(0.083)		(0.090)
WomanTopDir				0.280*	0.266		0.275*	0.267
				(0.165)	(0.171)		(0.161)	(0.171)
n	258	258	258	258	258	258	258	258
R^2	0.0001	0.021	0.004	0.016	0.018	0.001	0.014	0.014
R^2-adjusted	-0.004	0.009	-0.004	0.008	0.006	-0.003	0.010	0.007
F statistic	0.00003	5.933	1.405	4.599	5.047	0.503	4.015**	4.177

Source: created by the authors with data from the regressions performed and from Refinitiv (2021)

When the ratings of the social and corporate governance pillars are broken down (suppressed) to replace the particular result of the inclusion of women in the BoD (WomanBoardDir) and in top management positions (WomanTopDir), it can be seen that only the participation of women in top management positions is significant and positive at 10% significance (regression 8).

Table 5
Regression with unbalanced panel data to 2021

	Dependent variable: ROE							
	Regression							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant (Alpha)	14.113***	12.342***	15.184***	13.591***	14.036***	14.890***	12.407***	13.609***
	(1.592)	(1.814)	(1.300)	(1.360)	(1.367)	(1.010)	(0.962)	(1.148)
ESG	-0.006							
	(0.031)							
Env		-0.035	-0.010	-0.029	-0.014			
		(0.061)	(0.025)	(0.021)	(0.025)			

Gov		0.093**						
		(0.043)						
Soc		-0.033						
		(0.064)						
WomanBoardDir			-0.116		-0.144	-0.130		-0.163*
			(0.112)		(0.107)	(0.096)		(0.092)
WomanTopDir				0.237*	0.252*		0.229*	0.250*
				(0.140)	(0.135)		(0.138)	(0.135)
n	354	354	354	354	354	354	354	354
R^2	0.0001	0.004	0.001	0.006	0.010	0.001	0.005	0.010
R^2-adjusted	-0.003	-0.005	-0.005	0.001	0.001	-0.002	0.002	0.004
F statistic	0.015	2.776	1.002	3.505	4.615	1.016	3.021*	4.592

Source: created by the authors with data from the regressions performed and from Refinitiv (2021)

An interesting result is that, in the case of the largest and most operational companies in the Mexican stock market, the participation of women in senior management is critical to improving profitability. For every 1% increase in women's participation, profitability measured by ROE increases by 0.25%. Therefore, with a 10% or 20% improvement (marginal improvement), the profitability of these companies would improve, on average, by 2.5% or 5% respectively. If the 43 companies studied or related companies increased their average participation of women in top management positions from 6.32% to 16.32% or 26.32%, their profitability would improve by these percentages (2.5% or 5%, respectively). On the other hand, if a goal of at least 50% participation of women in these positions were achieved, the average profitability of the companies studied would be expected to improve by 10.92%, ceteris paribus. In the case of the percentage of women's participation in the BoD, it can be seen that, with data for 2019, there is no significant relation.

Nonetheless, with data for 2021, the relation becomes significant and negative at 10%. It is important to note that this result occurs only when this variable is included together with the participation of women in management positions. It is suggested that this situation may have an effect at the sample level and requires a qualitative and even historical review, which is beyond the scope of this paper. A potential explanation (merely preliminary) may result from the extremely atypical situation caused by the global lockdown of the COVID-19 pandemic in 2020 and its consequent recovery process from 2021 to the date of writing these lines.

As seen in the results, the hypothesis of this study is partially fulfilled. In the case of Mexican companies and taking as a starting point the sample of the 43 largest companies in terms of capitalization

and trading on the BMV, there is no statistical relation between profitability and the participation of women in the BoD. Nevertheless, there is a positive and significant relation between profitability and the participation of women in top management positions.

Conclusions

Both the level of corporate social responsibility and the inclusion of women in a company's Board of Directors and senior management are actions that have become of interest in current corporate activities and "obligations." Given the imperative need to generate more spaces for women at these levels, as well as the adequate social, environmental, and corporate governance impact that they should have, efforts are focused on measuring the benefit of greater participation of women in the BoD and in the highest executive and management levels in terms of profitability.

The trend in many developed countries is to impose quotas for women's participation (gender equity quotas) in companies to reduce discrimination and the wage gap between men and women. On the other hand, corporate governance in any company is a must.

In the case of companies listed on the Mexican Stock Exchange (BMV), there are no regulations in force that require greater participation of women on boards of directors or in senior management. Nonetheless, Socially Responsible Investment (SRI) defends that it is beneficial and appropriate for investors to allocate their resources with high social responsibility ratings (ESG score). Given this, multiple studies have been conducted to measure the benefit for investors of investing in companies with high ESG ratings. Currently, on the one hand, the positions on this issue are that a company with a high ESG score has a low level of profitability compared to its peers with low scores. The opposite position states that there is either no statistical relation or that the relation is positive.

For this paper, the position is taken regarding a positive impact on profitability, given the ESG score. Above all, it advocates for an improvement in profitability in the company, given a greater participation of women in it.

On the other hand, little has been written about the relation between having a large number (percentage) of women on the BoD or in top management and the profitability of companies—specifically for Mexican companies listed on the BMV and whose shares are or have been members of the BMV's prices and quotations index (PQI).

Accordingly, panel data regressions were estimated with information from these companies. The dependent variable was profitability, measured by return on investment (ROE), and the independent variables were the overall social responsibility rating, the ratings by pillar, and the percentages of women's participation in the BoD and in senior management (which belong to the corporate and social governance

pillar, respectively). The hypothesis to be demonstrated was that there is a positive statistical relation between the latter two variables and profitability.

The results found that the best model to use is the random effects model, and it was observed that only the corporate governance pillar and the percentage of women's participation in senior management have a positive and significant relation with profitability.

Specifically, it was found that for every 1.00% increase in the participation of women in senior management, profitability (ROE) increases by 0.27%.

This relation is a starting point considered relevant in this paper to prove the benefit of greater participation of women in the top management of companies, particularly companies of the size, importance, and listing level of those studied in this sample.

These results are critical in promoting greater gender inclusion in Mexican companies, either through regulations encouraging greater participation of women (management of quotas or minimum percentages, as in other countries) or through activism in investments. That is, promoting actions among private and institutional investors will encourage a company's decisions to increase the participation of women in senior management—a result that could give them greater access to better financing conditions and capital structure. This could improve investors' risk and return profiles and reduce companies' systematic risk levels. The result could give them greater access to better financing conditions and capital structure.

This work has many areas of opportunity for future research extensions. One of them is to develop a model that distinguishes the impact on profitability by type of industry or business; that is, using an industry and business classification to perform a regression model that helps to differentiate the impact of regressors by industry classification. Another potential extension is to work with information whose periodicity is greater (quarterly or monthly). This would reduce the effect of noise in the statistical relation due to the heterogeneity of the time series length in an unbalanced panel. In addition, it is suggested to investigate the relation between ESG rating and profitability in other countries and regions. The latter is suggested to determine whether the conclusions remain valid in samples of companies with different regional and cultural characteristics.

References

Alonso-Almeida, M. del M., Rodríguez-García, M. del P., Klender Aimer-Cortez, A., y Abreu-Quintero, J. L. (2009). Corporate social responsibility and financial performance: an application to Mexican listed companies. Contaduria y Administracion, 57(1), 53-77. Recuperado de http://www.scielo.org.mx/pdf/cya/v57n1/v57n1a4.pdf

Azmi, W., Hassan, M. K., Houston, R., y Karim, M. S. (2021). ESG activities and banking performance: International evidence from emerging economies. Journal of International Financial Markets, Institutions and Money, 70, 101277. https://doi.org/10.1016/J.INTFIN.2020.101277

Baltagi, B. H., y Chang, Y.-J. (1994). Incomplete panels: A comparative study of alternative estimators for the unbalanced one-way error component regression model. Journal of Econometrics, 62(2), 67-89. https://doi.org/10.1016/0304-4076(94)90017-5

Barko, T., Cremers, M., y Renneboog, L. (2021). Shareholder Engagement on Environmental, Social, and Governance Performance. Journal of Business Ethics, 1, 1-36. https://doi.org/10.1007/S10551-021-04850-Z/TABLES/12

Bauer, R., Ruof, T., Smeets, P., Laudi, M., Korevaar, M., Mertens, J., … Wolk, L. (2021). Get Real! Individuals Prefer More Sustainable Investments. The Review of Financial Studies, 34(8), 3976-4043. https://doi.org/10.1093/RFS/HHAB037

Blasi, S., Caporin, M., y Fontini, F. (2018). A Multidimensional Analysis of the Relationship Between Corporate Social Responsibility and Firms' Economic Performance. Ecological Economics, 147(October 2017), 218-229. https://doi.org/10.1016/j.ecolecon.2018.01.014

Bowen, H. R. (1953). Social Responsabilities of the Bussinesman (Harper and Row, ed.). Nueva York, USA.

Brogi, M., y Lagasio, V. (2019). Environmental, social, and governance and company profitability: Are financial intermediaries different? Corporate Social Responsibility and Environmental Management, 26(3), 576-587. https://doi.org/10.1002/csr.1704

Buallay, A., Hamdan, R., Barone, E., y Hamdan, A. (2022). Increasing female participation on boards: Effects on sustainability reporting. International Journal of Finance & Economics, 27(1), 111-124. https://doi.org/10.1002/IJFE.2141

Capelle-Blancard, G., y Couderc, N. (2009). The Impact of Socially Responsible Investing: Evidence from Stock Index Redefinitions. The Journal of Investing, 18(2), 76-86. https://doi.org/https://doi.org/10.3905/joi.2009.18.2.076

Carhart, M. M. (1997). On Persistence in Mutual Fund Performance. The journal of finance, LII(1), 57-82. https://doi.org/https://doi.org/10.1111/j.1540-6261.1997.tb03808.x

Carroll, A.B. (1983). Corporate social responsibility: Will industry respond to cutbacks in social program funding? Vital speeches of the day, 49, 604-608.

Carroll, Archie B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance. https://doi.org/10.5465/amr.1979.4498296, 37-45. https://doi.org/10.5465/AMR.1979.4498296

Chittoor, R., Kale, P., y Puranam, P. (2015). Business groups in developing capital markets: Towards a complementarity perspective. Strategic Management Journal, 127(1), 12-13. https://doi.org/10.1002/smj

Clarkson, M. E. (1995). A STAKEHOLDER FRAMEWORK FOR ANALYZING AND EVALUATING CORPORATE SOCIAL PERFORMANCE. Academy of Management Review, 20(1), 92-117. https://doi.org/10.5465/amr.1995.9503271994

Comi, S., Grasseni, M., Origo, F., y Pagani, L. (2020). Where Women Make a Difference: Gender Quotas and Firms' Performance in Three European Countries. ILR Review, 73(3), 768-793. https://doi.org/10.1177/0019793919846450

Consolandi, C., Jaiswal-Dale, A., Poggiani, E., y Vercelli, A. (2008). Global Standards and Ethical Stock Indexes: The Case of the Dow Jones Sustainability Stoxx Index. Journal of Business Ethics, 87(S1), 185-197. https://doi.org/10.1007/978-94-007-0818-1_13

Cornell, B. (2021). ESG preferences, risk and return. European Financial Management, 27(1), 12-19. https://doi.org/10.1111/EUFM.12295

Cornell, B., y Damodaran, A. (2020). Valuing ESG: Doing Good or Sounding Good? SSRN Electronic Journal. https://doi.org/10.2139/SSRN.3557432

Crifo, P., Diaye, M. A., y Pekovic, S. (2016). CSR related management practices and firm performance: An empirical analysis of the quantity-quality trade-off on French data. International Journal of Production Economics, 171, 405-416. https://doi.org/10.1016/j.ijpe.2014.12.019

Dalal, K., y Thaker, N. (2019). ESG and corporate financial performance: A panel study of Indian companies. Journal of corporate governance, 1, 44-59. https://doi.org/10.1016/j.jbankfin.2011.01.009

Davis, K. (1960). Can Business Afford to Ignore Social Responsibilities?: California Management Review, 23-29. https://doi.org/10.2307/41166246

Davis, K., y Blomstrom, R. L. (1968). Business and its environment. Academy of Management Journal, 11(2), 237-238. https://doi.org/10.5465/AMJ.1968.4297423

Derwall, J., Koedijk, K., y Ter Horst, J. (2011). A tale of values-driven and profit-seeking social investors. Journal of Banking & Finance, 35(8), 2137-2147.

Dewally, M., Flaherty, S. M. V., y Tomasi, S. (2017). The impact of social norms on female corporate board membership inclusion. Managerial Finance, 43(10), 1093-1116. https://doi.org/10.1108/MF-06-2015-0182

Donaldson, T., y Preston, L. E. (1995). The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications. https://doi.org/10.5465/amr.1995.9503271992, 20(1), 65-91. https://doi.org/10.5465/AMR.1995.9503271992

Döttling, R., y Kim, S. (2022). Sustainability Preferences Under Stress: Evidence from Mutual Fund Flows During COVID-19. SSRN Electronic Journal. https://doi.org/10.2139/SSRN.3656756

Eccles, N. S., y Viviers, S. (2011). The Origins and Meanings of Names Describing Investment Practices that Integrate a Consideration of ESG Issues in the Academic Literature. Journal of Business Ethics, 104(3), 389-402. https://doi.org/10.1007/s10551-011-0917-7

Escrig-Olmedo, E., Fernández-Izquierdo, M., Ferrero-Ferrero, I., Rivera-Lirio, J., y Muñoz-Torres, M. (2019). Rating the Raters: Evaluating how ESG Rating Agencies Integrate Sustainability Principles. Sustainability, 11(3), 1-16. https://doi.org/10.3390/su11030915

Fama, E. F., y French, K. R. (1992). Common risk factors in the returns on stocks and bonds. Journal of Financial Economics, 33(1), 3-56. https://doi.org/10.1016/0304-405x(93)90023-5

Frederick, W. C. (1960). The Growing Concern over Business Responsibility: California Management Review, 2(4), 54-61. https://doi.org/10.2307/41165405

Freeman, E. (1984). Strategic management: A stakeholder approach. New York: Cambridge university press.

Freeman, R. E. (1994). The Politics of Stakeholder Theory: Some Future Directions. Business Ethics Quarterly, 4(4), 409-421. https://doi.org/10.2307/3857340

Friedman, M. (2007). The Social Responsibility of Business Is to Increase Its Profits. En Corporate Ethics and Corporate Governance (pp. 173-178). https://doi.org/10.1007/978-3-540-70818-6_14

Galbreath, J. (2013). ESG in Focus: The Australian Evidence. Journal of Business Ethics, 118(3), 529-541. https://doi.org/10.1007/s10551-012-1607-9

García-Santos, J. J., y Zavaleta-Vázquez, O. H. (2019). Is the relationship between CSR activities and financial performance of organizations a short term result ? An answer with a panel data analysis. Contaduría y Administración, 64(4), 1-25. https://doi.org/10.22201/fca.24488410e.2020.2035

Gibson Brandon, R., Krueger, P., y Schmidt, P. S. (2021). ESG Rating Disagreement and Stock Returns. https://doi.org/10.1080/0015198X.2021.1963186, 77(4), 104-127. https://doi.org/10.1080/0015198X.2021.1963186

Godínes-Reyes, N. G., Gómez-Monge, R., Gutiérrez-Calderón, A., y Alfaro-Calderón, G. G. (2021). Efficiency Analysis of Mexican Stock Exchange Sustainable Firms. Revista Mexicana de Economía y Finanzas Nueva Época REMEF, 17(1), e481. https://doi.org/10.21919/remef.v17i1.481

Godínez-Reyes, N. L., Gómez-Monge, R., Alfaro-Calderón, G. G., y Calderón-Gutiérrez, A. (2022). Sustainable Value: An Empirical Research on Large Firms. Lecture Notes in Networks and Systems, 337, 197-208. https://doi.org/10.1007/978-3-030-96150-3_14/COVER/

Gutiérrez, P. R., Fuentes, M. del M. F., y Ariza, L. R. (2014). Strategic Capabilities and Performance in Women-Owned Businesses in Mexico. Journal of Small Business Management, 52(3), 541-554. https://doi.org/10.1111/JSBM.12048@10.1111/(ISSN)1540-627X.WOMEN-INENTREPRENEURSHIP

Gyönyörová, L., Stachoň, M., y Stašek, D. (2021). ESG ratings: relevant information or misleading clue? Evidence from the S&P Global 1200. Journal of sustainable finance & investment. https://doi.org/10.1080/20430795.2021.1922062

Hong, H., y Kacperczyk, M. (2009). The price of sin: The effects of social norms on markets. Journal of Financial Economics, 93, 15-36. https://doi.org/10.1016/j.jfineco.2008.09.001

Huang, J., Diehl, M.-R., y Paterlini, S. (2019). The Influence of Corporate Elites on Women on Supervisory Boards: Female Directors' Inclusion in Germany. Journal of Business Ethics, 1-18. https://doi.org/10.1007/s10551-019-04119-6

Koijen, R. S. J., Richmond, R. J., Yogo, M., Campbell, J., Conlon, C., Daniel, K., … Van, S. (2020). Which Investors Matter for Equity Valuations and Expected Returns? https://doi.org/10.3386/W27402

Lee, K. H., Cin, B. C., y Lee, E. Y. (2016). Environmental Responsibility and Firm Performance: The Application of an Environmental, Social and Governance Model. Business Strategy and the Environment, 25(1), 40-53. https://doi.org/10.1002/bse.1855

Lisin, A., Kushnir, A., Koryakov, A. G., Fomenko, N., y Shchukina, T. (2022). Financial Stability in Companies with High ESG Scores: Evidence from North America Using the Ohlson O-Score. Sustainability 2022, Vol. 14, Page 479, 14(1), 479. https://doi.org/10.3390/SU14010479

McGuire J. W. (1963). Business and society. New York: McGRaw-Hill.

Mitchell, R. K., Agle, B. R., y Wood, D. J. (1997). Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of who and What Really Counts. The Academy of Management Review, 22(4), 853-886. https://doi.org/10.5465/AMR.1997.9711022105

Mozas-Moral, A., y Puentes-Poyatos, R. (2010). LA RESPONSABILIDAD SOCIAL CORPORATIVA Y SU PARALELISMO CON LAS SOCIEDADES COOPERATIVAS. Revista de Estudios Cooperativos, 103, 75-100. Recuperado de www.ucm.es/info/revesco

Naffa, H., y Fain, M. (2022). A factor approach to the performance of ESG leaders and laggards. Finance Research Letters, 44, 102073. https://doi.org/10.1016/J.FRL.2021.102073

Navarro, F. (2012). Responsabilidad social corporativa: Teoría y práctica. Pozuelo de Alarcon: ESIC editorial.

Newey, W. K., y West, K. D. (1987). A Simple, Positive Semi-Definite, Heteroskedasticity and Autocorrelation Consistent Covariance Matrix. Econometrica, 55(3), 703-708. https://doi.org/10.2307/1913610

Ozdemir, O., Kizildag, M., Dogru, T., y Demirer, I. (2021). Corporate social responsibility and financial performance: Does board diversity matter? Journal of Global Business Insights, 6(2), 98-116. https://doi.org/10.5038/2640-6489.6.2.1169

Post, J. E., Preston, L. E., y Sachs, S. (2002). Managing the Extended Enterprise: The New Stakeholder View. California Management Review, 45(1), 6-28. https://doi.org/10.2307/41166151

Provasi, R., y Harasheh, M. (2021). Gender diversity and corporate performance: Emphasis on sustainability performance. Corporate Social Responsibility and Environmental Management, 28(1), 127-137. https://doi.org/10.1002/CSR.2037

Przychodzen, J., Gómez-Bezares, F., Przychodzen, W., y Larreina, M. (2016). ESG Issues among Fund Managers—Factors and Motives. Sustainability, 8(10), 1078. https://doi.org/10.3390/su8101078

Refinitiv. (2019a). Environmental, Social and Governance (ESG) Scores from Refinitiv. Recuperado 1 de febrero de 2020, de ESG data website: https://www.refinitiv.com/content/dam/marketing/en_us/documents/methodology/esg-scoresmethodology.pdf

Refinitiv. (2019b). Environmental, Social and Governance (ESG) Scores from Refinitiv.

Refinitiv. (2021). Refinitiv Eikon. Recuperado 15 de julio de 2021, de Thomson Refinitiv Eikon login website: https://eikon.thomsonreuters.com/index.html

Rowley, T. J. (1997). Moving Beyond Dyadic Ties: A Network Theory of Stakeholder Influences. https://doi.org/10.5465/amr.1997.9711022107, 22(4), 887-910. https://doi.org/10.5465/AMR.1997.9711022107

Schröder, M. (2004). The performance of socially responsible investments: investment funds and indices. Financial Markets and Portfolio Management, 18(2), 122-142. https://doi.org/10.1007/s11408-004-0202-1

Schröder, M. (2007). Is there a Difference? The Performance Characteristics of SRI Equity Indices. Journal of Business Finance & Accounting, 34(1-2), 331-348. https://doi.org/10.1111/j.1468-5957.2006.00647.x

Sethi, S. P., Martell, T. F., y Demir, M. (2017). An Evaluation of the Quality of Corporate Social Responsibility Reports by Some of the World's Largest Financial Institutions. Journal of Business Ethics, 140(4), 787-805. https://doi.org/10.1007/s10551-015-2878-8

Sharpe, W. (1963). A simplified model for portfolio analysis. Management Science, 9(2), 277-293. https://doi.org/10.1287/mnsc.9.2.277

Sharpe, W. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. The journal of finance, XIX(3), 425-442. https://doi.org/10.2307/2977928

Sheldon, O. (2004). The Philosophy of Management. The Philosophy of Management. https://doi.org/10.4324/9780203507827

Signori, S., San-Jose, L., Retolaza, J. L., Rusconi, G., Chiucchi, M. S., Baldo, M. Del, y Demartini, P. (2021). Stakeholder Value Creation: Comparing ESG and Value Added in European Companies. Sustainability 2021, Vol. 13, Page 1392, 13(3), 1392. https://doi.org/10.3390/SU13031392

Statman, M. (2000). Socially Responsible Mutual Funds. Financial Analysts Journal, 56(3), 30-39. https://doi.org/10.3905/jpm.2016.42.2.140

Swamy, P. A. V. B., y Arora, S. S. (1972). The Exact Finite Sample Properties of the Estimators of Coefficients in the Error Components Regression Models. Econometrica, 40(2), 261. https://doi.org/10.2307/1909405

Thomson-Reuters. (2019). London Stock Exchange shareholders bless $27 billion Refinitiv deal - Reuters. Recuperado 2 de abril de 2020, de Business news website: https://www.reuters.com/article/uslse-m-a-refinitiv/london-stock-exchange-shareholders-bless-27-billion-refinitiv-dealidUSKBN1Y01DD

Torre, M. La, Mango, F., Cafaro, A., y Leo, S. (2020). Does the ESG Index Affect Stock Return? Evidence from the Eurostoxx50. Sustainability 2020, Vol. 12, Page 6387, 12(16), 6387. https://doi.org/10.3390/SU12166387

Truño, J. L., y Rialph, J. (2007). La responsabilidad social corporativa. En ACCID contabilidad y dirección (Ed.), Responsabilidad social corporativa. Barcelona: Edicoones gráficas Rey S.L.

Walton, C. C. (1867). Corporate social responsibilities. Belmont: Wadsworth.

Wartick, S. L., y Cochran, P. L. (1985). The Evolution of the Corporate Social Performance Model. Academy of Management Review, 10(4), 758-769. https://doi.org/10.5465/AMR.1985.4279099

Xie, J., Nozawa, W., Yagi, M., Fujii, H., y Managi, S. (2019). Do environmental, social, and governance activities improve corporate financial performance? Business Strategy and the Environment, 28(2), 286-300. https://doi.org/10.1002/bse.2224

Yoo, S., y Managi, S. (2022). Disclosure or action: Evaluating ESG behavior towards financial performance. Finance Research Letters, 44, 102108. https://doi.org/10.1016/J.FRL.2021.102108

Annex

This Annex presents the relation of the companies included in the data panels (balanced and unbalanced) to perform the regressions in this paper. The last column indicates that they were included in the balanced panel. This is on the understanding that all the companies mentioned in this Appendix are part of the unbalanced panel.

Table A1

Refinitiv RIC	BMV Ticker	Name of company	Sector name according to TRBC
AC.MX	AC*	Arca Continental SAB de CV	Food and beverages
ALEATIC.MX	ALEATIC*	Aleatica SAB de CV	Transportation
ALFAA.MX	ALFAA	Alfa SAB de CV	Industrial clusters
ALPEKA.MX	ALPEKA	Alpek SAB de CV	Chemicals
AMXL.MX	AMXL	America Movil SAB de CV	Telecommunication services
ASURB.MX	ASURB	Grupo Aeroportuario del Sureste SAB de CV	Transportation
BIMBOA.MX	BIMBOA	Grupo Bimbo SAB de CV	Food and beverages
BSMXB.MX	BSMXB	Banco Santander Mexico SA Institucion de Banca Multiple	Banking and investment services
CEMEXCPO.MX	CEMEXCPO	Cemex SAB de CV	Mineral resources
CHDRAUIB.MX	CHDRAUIB	Grupo Comercial Chedraui SAB de CV	Retail food and medicines
ELEKTRA.MX	ELEKTRA*	Grupo Elektra SAB de CV	Banking and investment services
FEMSAUBD.MX	FEMSAUBD	Fomento Economico Mexicano SAB de CV	Food and beverages
GAPB.MX	GAPB	Grupo Aeroportuario del Pacifico SAB de CV	Transportation
GCARSOA1.MX	GCARSOA1	Grupo Carso SAB de CV	Industrial conglomerates
GENTERA.MX	GENTERA*	Gentera SAB de CV	Banking and investment services
GFINBURO.MX	GFINBURO	Grupo Financiero Inbursa SAB de CV	Banking and investment services
GFNORTEO.MX	GFNORTEO	Grupo Financiero Banorte SAB de CV	Banking and investment services
GMEXICOB.MX	GMEXICOB	Grupo Mexico SAB de CV	Mineral resources
GRUMAB.MX	GRUMAB	Gruma SAB de CV	Food and beverages
ICHB.MX	ICHB	Industrias CH SAB de CV	Mineral resources
KIMBERA.MX	KIMBERA	Kimberly-Clark de Mexico SAB de CV	Personal and household products and services
KOFUBL.MX	KOFUBL	Coca-Cola Femsa SAB de CV	Food and beverages

Refinitiv RIC	BMV Ticker	Name of company	Sector name according to TRBC
LABB.MX	LABB	Genomma Lab Internacional SAB de CV	Pharmaceutical and medical research
LALAB.MX	LALAB	Grupo Lala SAB de CV	Food and beverages
LIVEPOLC1.MX	LIVEPOLC-1	El Puerto De Liverpool SAB De CV	Retail sales
MFRISCOA1.MX	MFRISCOA-1	Minera Frisco SAB de CV	Mineral resources
ORBIA.MX	ORBIA*	Orbia Advance Corporation SAB de CV	Chemicals
PEOLES.MX	PE&OLES*	Industrias Penoles SAB de CV	Mineral resources
PINFRA.MX	PINFRA*	Promotora y Operadora de Infraestructura SAB de CV	Transportation
SAN.MX	SAN*	Banco Santander SA	Banking and investment services
TLEVISACPO.MX	TLEVISACPO	Grupo Televisa SAB	Cyclical consumption services
WALMEX.MX	WALMEX*	Wal Mart de Mexico SAB de CV	Retail sales

Source: created by the authors with data from Refintiv (2021)