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Research Article

The impact of Environmental Performance on Financial Performance

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Abstract

The current Paper seeks to study the relationship between Environmental Performance and financial performance of companies in Tehran Stock Exchange. The environmental Performance is measured by questionnaire and the financial performance is measured by Return on assets (ROA), Return on equity (ROE), market value-added (MVA) and economical value-added (EVA). 85 companies as sample were taken from companies in the Tehran Stock Exchange. The collected data was analyzed through structural equation modeling (AMOS 20). The study showed that there is association between environmental performance and ROA and ROE amongst Iranian companies. Also the results of the research showed that there is no association between environmental performance and MVA and EVA amongst Iranian companies.

Key Words: Environmental performance, financial performance, market value-added**,** economical value-added**,** return on assets, Return on equity

Introduction

During recent years among researchers and business experts, has always been this question such as "Does green pay?" or "Does doing good benefit our shareholders?" And given that the results of previous studies in this area have high dispersion, making it difficult for managers to address cost and environmental issues and Opportunities or challenges that may be followed (lee et al., 2011).

Peter Drucker believes that the large deformation of an industrial society to a post-industrial society is upcoming (Ikerd, 1996).

Peloza and Yachnin (2008) studied the results of 36 years (1972-2008) discussion on the corporate sustainability and financial performance and finally, presented criteria for future studies. Their study showed that 59% of the academic studies have a positive relationship, a significant negative correlation of 27% and ١٤٪ of the results neutral. Most of this research in developed countries in terms of cultural and economic characteristics, such as United States and Europe has

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been conducted, but few studies have been conducted in developing countries such as Indonesia and Malaysia. Certainly the most important limitation**s** for research on this topic in developing countries are the lack of suitable indicators and criteria for assessment of environmental performance, cultural gap, and lack of education, awareness and public demand in the field of environment.

This study investigated the relationship between environmental performance and financial performance of companies in Tehran Stock Exchange and due to lack of sustainability index in Iran Stock market, the Information of environmental performance collected by a comprehensive questionnaire designed for this purpose.

Literature review

The findings of this study demonstrate that the implementation of ESG systems substantially enhances the financial performance of enterprises within industries characterized by significant environmental impacts. Specifically, investments in environmental protection led to greater resource utilization efficiency, social responsibility initiatives foster enhanced employee productivity and customer loyalty, and strong corporate governance improves management structures and decision-making processes. The case study of Hunan Valin Steel Co., Ltd. reinforces these results, illustrating that a comprehensive ESG framework not only helps such enterprises achieve their environmental and social responsibility objectives but also markedly improves their financial outcomes (Li etal, 2024)

The meta-analysis indicated a low overall positive correlation between ESG and financial performance. However, Chinese and Korean papers demonstrated a moderate correlation, while English papers showed no significant correlation. This study informed scholarly, managerial, and policy discourse on sustainable business practices, contributing to the evolving ESG landscape. (Bai and Kim,2024).

This paper examines the impact of firms' environmental, social, and governance (ESG) activities on financial reporting quality (FRQ). The study uses ٤٥,٨٧٧ firm-year observations from ٦٥ countries between ٢٠٠٣ and ٢٠٢١. In the research model, firm characteristics and macroeconomic and institutional structure characteristics of the countries are controlled for. This study finds that firms with higher ESG scores have higher FRQ. ESG offers a framework for assessing how firms handle environmental impacts, social responsibilities, and ethical management practices. These criteria mean that companies have a not only to make profits but also to contribute to society and our planet. In today's business environment, ESG has become a key factor that shapes the future success of firms. In this context, the topic of how ESG factors influence reports that reflect the

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financial performance of firms has been a subject of ongoing research. This study investigates the effects on the quality of financial reporting of ESG factors, which are increasingly important globally (ozer etal, 2024).

The study finds that environmental, social, and governance disclosures significantly influence the Return on Equity and Return on Assets. Testing for the moderating role of Corporate Governance, especially board diversity and size, shows that board diversity moderates the association between social and governance disclosure and firm performance. Board size moderates the relationship between social disclosure and firm performance. By contrast, Board Size and Diversity do not moderate the relationship between environmental disclosure and firm performance.(Alslaibi and Abdalkarim, 2024).

In recent years, the relationship between Environmental, Social, and Governance (ESG) practices and corporate performance has garnered significant attention from both academia and industry. Globally, a substantial body of literature has emerged since the inception of ESG case studies, with early research primarily focusing on the role of ESG in enhancing corporate performance. Specifically, these studies highlighted how ESG initiatives, particularly in environmental protection, contribute to stakeholder acceptance and improved market performance (Chang and Lee, 2022; Gerard, 2019)

In China, ESG research has developed more recently, gaining traction due to the country's unique development trajectory and the environmental challenges it faces. Chinese scholars have predominantly focused on the role of ESG in enhancing corporate transparency, mitigating risks, and increasing competitiveness (Liu and Zhang, 2023; Lokuwaduge and de Silva, 2020).

Richards (2002) Defined environmental performance as to meet human needs without jeopardizing the health of ecosystem.

The concept of environmental performance in business has been emerging for the past few decades. In the 1980s, as the manufacturing sector grew, the concentration was to prevent and reduce pollution from manufacturing emissions. In the 1990s, when consumer-centric practices were growing, the concept was product stewardship. Companies competed to develop products that were environmentally harmless (kutler, 2011, 106).

Today, natural resources are getting scarcer and may not meet a strong growth in consumption in the prolong term. The prices of certain resources are soaring and increasing the cost burden for companies and finally customers. Companies need to preserve resources and energy to meet environmental challenges. Those that manage the scarcity of resources will be the final

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conquerors. Being able to get a sustainable supply of natural resources is increasingly becoming a strong competitive advantage (Ibid, 106).

Kotler (2011) believe that "the strongest future trend for corporations, especially in the capital market, is the issue of sustainability". Sustainability is a relatively serious challenge for the companies in creating value for shareholders in the long term. Corporate see the sustainability as the long-term survival in business world, On the other hand, Community, defined as the long-term survival of social and environmental. Traditionally, Companies have not considered the synergy between these two definitions of sustainability. But today, along with the efforts to find new competitive advantages, the companies are aware of opportunities to achieve this synergy. Also being discussed topics such as market polarization and lack of resources, Along with growing attention to the central customer view and Stakeholder Theory, the importance and necessity of the convergence between these two definitions are added daily. Also, companies should share full information about its environmental efforts with stakeholders and develop this competitive advantage.

Preferably, the management should Commitment long-term interests of sustainability for shareholders and stakeholders in terms of financial criteria.

Sustainable companies in the financial crisis had a better performance than same level of companies. From May to November 2008, the Stock price of sustainable companies in 16 industries compared with the average of industry, was15 percent higher. Managers in companies had emphasized reducing the adverse effects of their environment and society activities, the annual profit growth of 16% and share price growth of 45%, while companies had little interest to sustainability, growth in annual profits only 7% and their share price growth was only 12%. Also customers announced that are willing to pay more money for green products. Therefore, according to executives, basically the concept of sustainability is good for business. About 34 percent of respondents stated that sustainability absorbs consumers and will improve shareholder value.

Epstein and Roy (2001) in their study as the" sustainability in action" demonstrated the relationship between performance and financial performance by the following model:

Most authors have an area of common ground that strategies and practices to manage environmental, social or sustainability impacts influence the performance of operations, efficiency and costs and the communication of a firm’s environmental program as well as its competitiveness (Weber, 2005).

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Academic research of Dasgupta et al (2002), Dawleyet al (2000), Kinget al (2001), Klasnet al (1996) and Astgr (2004) has approved positive correlation between environmental performance and financial performance.

Sarumpaet (2005) considering environmental ratings of Indonesian companies as indicators of environmental performance, Concluded that no meaningful relationship between environmental performance and financial performance, but the positive and significant relationship was found between the ISO 14001 and financial performance.

Nakao (2005) Research showed that the environmental performance of a company in Japan has a direct relationship with the financial performance of companies.

Zhang Ran and Stem (2007) during the research of U.S. companies showed that the lack of consistency and diversity of past research results, were due to Differences in choice of control variables and environmental performance measure. Their research results showed that Companies that have a favorable financial performance, more willing to invest in environmental activities. Yet environmental activities not directly related to increased profitability. The company is profitable and has good financial performance, In fact, companies that are valid and ranked in the environmental rankings rating are superior.

Sjord et al (2011), taking 337 Chinese and Dutch companies, Reuse of materials and reduce environmental pollution in terms of sustainability was introduced and seeks its relationship with financial performance. Between there use of materials and financial performance in China and the Reduce pollution in the Netherlands confirmed but in China there was no significant relationship.

Lee et al. (2011), studied the issue in the oil and gas companies, using accounting variables, (ROI, ROE, ROS) and economic variables (TobinsQ, economic value added). They found that the performance of R & D unit and corporate sustainability index, determinants of competitiveness and improvement of company performance.

Based on the literature section above, the hypotheses posed in this study are:

١- There is association between environmental performance and Return on Investment (ROI) amongst Iranian companies
٢- There is association between environmental performance and Return on Equity (ROE) amongst Iranian companies
٣- There is association between environmental performance and market value added (MVA) amongst Iranian companies
٤- There is association between environmental performance and economic value added (EVA) amongst Iranian companies

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Method

This research is descriptive-correlation type. The environmental Performance is measured by questionnaire and the financial performance is measured by Return on assets (ROA), Return on equity (ROE), market value-added (MVA) and economical value-added (EVA). The collected data was analyzed through structural equation modeling (AMOS 20).

The accepted firms in Tehran stock exchange consist on statistical society of this research. The statistic sample of present research has been extracted by deletion sampling from statistic society as follows:

١) Since the nature of activity is different for the investment firms, insurance, leasing, and banks, the activity of firms selected should be production.

2) To choose a convergent sample, firms should have been chosen before the year ٢٠٠٨ in Tehran Stock Exchange and its stocks should have been purchased from the start of the year 2008.

٣) In order to select active firms, the exchanges of these firms should have been active during the years between 2008 and 2013 and there should not be any stops more than three months in their activities.

٤) In order to be compared properly and avoid divergences, the fiscal year should end on 29th of Esfand (March 21st.) and during the years between 2008 and 20013 they shouldn't have changed their fiscal year.

After matching those data sources into a common list, 85 companies were obtained as usable data. Cronbach's alpha for testing the validity of the questionnaire is used.

Finding and Results

Reliability and Validity of Construct: Reliability and validity of construct should be evaluated before testing the hypotheses in the structural model. Table 1 Shows Results of test of validity and reliability of measurement model. As can be seen in table 1, All Evaluated indexes of validity and reliability are in acceptable level.

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Table 1.
Measurement Model Evaluation

Construct	Indices	Standardized Loading	Cronbach's alpha (α)	CR	AVE
environmental performance	-	-	۰,۸۵۱	۰,۸۳	۰,۵٦
	۱	۰,۸۲	۰,۷٦۷	-	-
	۲	۰,٦۹	۰,۷۵۳	-	-
	٤	۰,۸۲	۰,۷۵۸	-	-
	٥	۰,٦٦	۰,۷٤۷	-	-

Structural Model (Hypothesis Test): The results of the structural model are presented in tables 2 and 3. These results indicate that although, except assumption H۲ and H۳, the other hypothesis of the research are meaningful in the level of p< ۰,۰۰۱ and can be confirmed in terms of statistical.

As shown in table 2, statistically all hypotheses are meaningful and can be confirmed expect of the hypothesis of H۳ and H٤. Also, the results of the goodness-of-fit indices show that this modified model fits the data adequately (table 3) and all goodness-of-fit indices are in acceptable range. As table 3 shows all goodness-of-fit indices are in standard range.

According to table 2 can be expressed H۳ and H٤ hypothesis is not confirmed and There is no association between environmental performance and MVA and EVA amongst Iranian companies. however, other hypotheses are confirmed. In other words, environmental performance have a positive effect on ROA and ROE amongst Iranian companies.

Table 2.
Testing Hypotheses Using Standardized Estimates (Hypothesized Model)

Hypothesized Path	S.E	Std. Coefficient	T-Value	p	Supported
H۱: environmental performance → ROA	.۰۷۸	.۱۹٦	۲,۲۳۰	.۰۲٦	Yes
H۲: environmental performance → ROE	.۰۹٤	.۲۹۸	٥,٤۱۲	.۰۰٤	Yes
H۳: environmental performance → MVA	.۱۰۷	-.۱۲۳	٤,۲۱٥	.۲٤۷	No
H٤: environmental performance → EVA	.۱۲۳	-.۱۱۷	۳,۸٤٥	.۳۲۰	No

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Table 3.
The Goodness-of-fit Indices of Hypothesized Structural Model

χ^2/df	RMSEA	CFI	NFI	TLI	AGFI	GFI	p	χ^2
١,٠٤٦	.٠٢٣	.٩٩٥	.٩٠٣	.٩٩٣	.٩٠٢	.٩٢٨	.٣٣٨	.٦٥٩

Conclusions and Implications

According to the findings of this research:

١- There is a low positive and meaningful relationship between environmental performance and ROA and ROE

This result agrees with the researches of Hurt and ahuja (1996), Russo & fouts (1997), Cohen (1997), Edwards (1998), Weber et al (2005) and Lee et al. (2011) and does not accord with researches of University of lampang (2005), Wanger (2005); Argon Aragón & López, 2007).

Peloza and Yachnin (2008) found that 70% of accounting-based metrics demonstrated a positive relationship between environmental performance and financial performance, compared to 53% of market-based metrics and Previous research has found that accounting measures tend to show a larger correlation(Margolis et al., 2008; Orlitzky et al., 2003) between sustainability and financial performance. This finding supports the hypothesis that financial performance has more impact on sustainability than sustainability has on financial performance. This is because accounting measures reflect past performance of the firm, while market measures predict future performance. If a stronger relationship exists between past financial performance and sustainability, then the causal direction does not support the business case for sustainability. These findings illustrate the importance of measuring performance as close to the sustainability initiative as possible, in order to demonstrate causality.

Zhang and Stem (2007) Expressed the companies that financially have an optimal performance are more willing to invest in environmental activities and emphasized on the impact of financial performance on environmental performance. Therefore, accounting criteria cannot the lonely criteria for decision making.

٢. There is no significant relationship between environmental performance and economic performance assessment criteria.

- Result of MVA variable Varies with the study of Hillman and kim (2001) and Lee et al. (2011). It should be noted, Hillman and Kim (2001) negatively correlated while the study of Lee et al. (2011) has a significant positive relationship.

Lehn and Makhija (1996) found that EVA and MVA contains information about the quality of strategic change and are used as signs of strategic change. Inexplicitly can be said: strategic change in attitude toward the benefits of environmental sustainability is not present in corporate management.

According to Stewart (1991), the purpose of MVA is measuring the shareholder value in any given moment of market; it can be argued that ENS has no impact on shareholder value.

Limitations and Recommendations

Lack of the environmental performance Index at the Tehran Stock Exchange was the most significant limitation of this study, thus providing a suitable measure of sustainability index In order to prevent the scattered studies and also to create uniform framework in this area seems to be necessary. According to the research findings and limitations, Future studies are recommended in the following areas:

١. The relationship between Economic and Social performance and financial performance of firms in Tehran stock exchange

٢. The Effect of industry type on the relationship between environmental performance and financial performance of firms in Tehran stock exchange.

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