

ESG Performances and Economic Growth

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Abstract. This paper investigates whether better ESG performance enhances economic growth. The study sample covers both the MSCI universal ESG performances of the USA, China, Europe, and Japan, and their annual GDP growth rates from 2010 to 2023. The results show that ESG performance has a positive relationship with economic growth. This relationship is much stronger in developed countries' samples. Moreover, developed countries have more positive ESG correlations with developed countries than with developing countries.

Keywords: CEO compensation; ESG; governance; disclosure; stock liquidity; risks; county-to-district (CtD) reform; economic growth; correlation.

1. Introduction

ESG refers to “Environmental, Social, and Governance”. Environmental refers to the sustainability of production and the degree of environmental friendliness. Social stands for the responsibility to employees, such as the implementation of gender equality, and the firm’s impact on community and society. Governance speaks to the control mechanism over ownership and management, including transparency, bribery, and internal control.

In the next section, we review how leadership, disclosure, risk, and other factors influence ESG performance. “ESG performance” refers to a firm’s level of responsibility to the three ESG factors. The better the ESG performance is, the less risky the company would appear to investors. The healthy ownership and leadership can improve governance performance. What’s more, ESG disclosure may have a positive effect on operations, financial and marketing performance, which improve firms’ ESG.

2. Literature Review

Alareeni et al. [1] measured ESG performance by incorporating numerous variables as noted in Table 1 below. Some of the variables include financial measures, such as return on assets, return on equity, Tobin’s Q ratio, among others. Other variables refer to the company’s ESG disclosure.

Table 1. Description of Variables.

Variable	Definition	Description
Perf	Firm's performance	<ul style="list-style-type: none"> ● Measured by ROA, ROE and Tobin's Q. ● ROA equals net income divided by total assets. ● ROE equals net income divided by equity. ● Tobin's Q equals current liabilities plus the market value of share capital divided by TA.
ESG	Firm disclosure of its environmental, social and governance	<ul style="list-style-type: none"> ● The ESG Bloomberg index includes all the disclosure of EVN, CSR, CG indices.
EVN	Environmental disclosure	<ul style="list-style-type: none"> ● The EVN Bloomberg index measures the disclosure of energy use, waste, pollution, natural resource conservation and animal treatment.
CSR	Social responsibility disclosure	<ul style="list-style-type: none"> ● The CSR Bloomberg index measures disclosure of business relationships, donation, volunteer work, employees' health and safety.
CG	Governance disclosure	<ul style="list-style-type: none"> ● The CG Bloomberg index measures the disclosure of corporate governance code.
FS	Firm size	<ul style="list-style-type: none"> ● Measured by total assets.
FL	Financial leverage	<ul style="list-style-type: none"> ● Measured by total debt to total assets.
AT	Asset turnover	<ul style="list-style-type: none"> ● Measured by net sales as a percentage of total assets.
AG	Assets growth	<ul style="list-style-type: none"> ● Measured by the annual change in total assets.

ESG disclosure has great impact on individuals [1]. Knowing this, firms will exploit ESG in order to successfully market products to individuals thereby increasing product sales and corporate profits. Greater sales and operating profits will enhance corporations' abilities to service their debts thus reducing credit risks. Additionally, environmentally sensitive corporations will attract greater shareholder investment. Based on the research, it is suggested that national governments and supranational policymakers, such as the World Bank, should require firms to accurately disclose their ESG activities to enhance financial markets stability worldwide. They also suggested the following results:

The descriptive analysis results show that the overall ESG, CSR, EVN and CG tend to be higher with firms that have high assets and high financial leverage [1]. Further, results showed that firms with high disclosure levels of ESG, EVN and CSR have higher operational and financial performance (ROA and ROE).

A firm's ESG performance is influenced by its nationality, its boards of directors, and its ownership [2]. First, nationality can be further broken down into a country's legal system, its economic development and education. A country's legal system has the greatest impact among these factors.

What's more, ESG would be higher if the firm had either a female or a young chairman in the board. Family ownership satisfies investors' ESG expectations according to Gillan, Sekerci, and Starks [2], but it is contradicted to the results that family ownership has lower ESG scores due to the expropriation hypothesis of family ownership by El Ghouli, Guedhami, Wang, and Kwok [3]. This difference might be caused by different country-based samples. Besides, state-owned firms usually perform better as state-owned firms have better ESG score, including aggregate, Environment and Social performances.

ESG performance has both positive and negative effects on the firm [2]. ESG attracts more investors who believe that ESG will bring positive long-term performances. Young people usually have more incentive to invest in firms with better ESG performance. It is suggested that there is a

positive relationship between reputation of ESG and following implicit contracts, but some researches had contradicted results. However, higher ESG performance will reduce ROA or stock returns as people assume that “any benefits to stakeholders from social responsibility come at the direct expense of firm value.”

The influences of government policies for ESG performances can be explained by the following research. Xue [4] found that rent-seeking behavior, which occurs when entities gain wealth without making any contribution to the society, affects ESG performance. The result shows that county-to-district (CtD) reform can solve the problem of rent-seeking behaviors of businesses. Figure 1 below explains China’s government hierarchy and administrative division. The left column represents the government hierarchy and the right column represents corresponding administrative division [4].

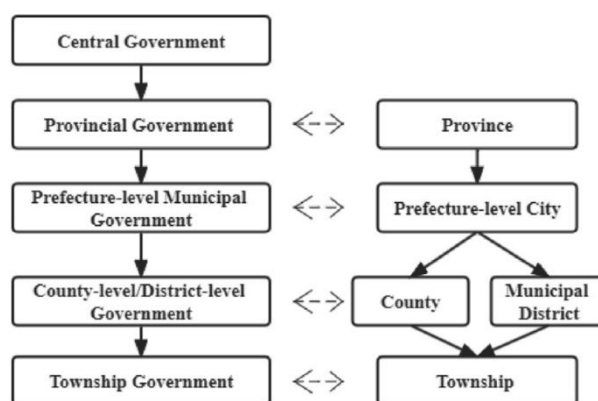


Figure 1. China’s government hierarchy and administrative division.

By weakening the autonomy of the county-level government and improving integration among different districts, which enhanced firms’ competitiveness. The firms may therefore pay more attention to ESG strategies. Local governments would also make more pro-ESG policies while having more control over the firms. The reform improved not only the regulation in the district on rent-seeking behaviors, but the ESG performance of the firms.

Deng and Cheng [5] suggested that the government should make pro-ESG policies. It suggested that the government should focus more on manufacturing, and consider the differences in the volume of pollution and products among small firms. For example, the government should provide more subsidies and more environmental protection investment to firms that produce more pollution. Entrepreneurs and investors should also be encouraged to manifest higher social responsibility by developing or investing in industries with higher ESG evaluation.

Based on this, Xue believes that centralization of prefecture-level municipal governments can improve the ESG performances of the companies [4]. Xue suggested that the government can weaken market segmentation, ease economic uncertainty and reduce rent-seeking by using ESG.

Deng and Cheng suggested that policies should be made based on different features of firms and focus on switching secondary industry to a more environmentally friendly one [5]. Investors and entrepreneurs should also focus more on firms with better ESG performances.

ESG disclosure can reduce information asymmetry. The effects of firms’ ESG performances on its finances would be more visible to investors. This will increase the accuracy of companies’ stock pricing and thereby reflect true intrinsic values. Thus, investors will have more confidence investing in stocks that engage in ESG initiatives [6].

Higher social performance can also reduce financial risk by increasing firms’ flexibility when facing economic downturns. This also enhances firm reputation by being a good member of the community and respecting business ethics [6].

Premium pricing due to Environmental and Social activities have a unidirectional effect on firm risk. This means that Environmental and Social premiums can affect firm risk while firm risk cannot affect the premiums [6].

Chen et al. found that ESG performances have a positive and profitable relationship with the Chinese Sovereign Wealth Fund, which in turn attracts more investment [7]. It was also found that among the three factors of ESG, the governance factor has a stronger correlation with the amount of additional investment attracted than the other two.

Overall, as Gillan et al. describe, local governments' policies would influence firms' ESG performances very significantly [2]. Features of a firm, like boards and ownership, would also affect its ESG performance. Thus, a firm with better location and more equal board structure will have better ESG performance.

Alareeni and Hamdan state that ESG disclosure can improve a firm's asset efficiency and firms' assets market value by improving the operational and market performances [1]. ESG can be used as strategic product for firms to increase profit.

According to Xue, government policies such as CtD reform can reduce rent-seeking behavior by which companies seek to derive economic benefits without having made any ESG contributions [4]. The CtD reform combined small districts and led to more unified policies, which reduced information asymmetry between investors and firms, so that investors are able to invest for the long run and thereby foster greater market stability.

Sassen et al. found that a firm with higher ESG value will have lower risks, including systematic, credit and total risks, and have a better reputation, especially for environmental industries [6]. Policy makers should make regulations for compulsory ESG disclosure which would assure the accuracy of the data and stabilize the stock price of corporations. They also suggested that:

To provide (potential) investors with relevant and reliable information, national or supranational policymakers could increase disclosure regulation (e.g., by means of mandatory CSR disclosure). Moreover, mandatory disclosure could encourage firms to integrate ESG factors into their firm strategy and operations and thus stabilize capital markets by lowering market fluctuations [6].

Chen et al. found that attention to ESG factors could attract investors [7]. Chen also found that the governance factor has a stronger impact on attracting investors than environmental and social factors.

In summary, locating in a country with an established and viable legal system, positive social attitudes toward ESG implementation, equal leadership chances for every member in the firm and community, and transparent disclosure can significantly improve a firm's ESG performance and reduce its financial risks. Government policies and reforms are also very significant. Policies that encourage disclosure and aim more equal and competitive market help to promote ESG.

3. Analysis

ESG is implemented in order to create a more sustainable production infrastructure and thereby to attract more equity in investors. An unintended consequence is that ESG performance contributes to economic growth as measured by GDP. Improving Environmental performance can help to attract more investment, especially from younger investors. Having better social performance means having more equal working opportunities for women and vulnerable groups. Thus, more tax revenue may be created as more people are going to work. Additionally, enhancing Governance performance can improve firms' performance and thus improve investment and directly improve economic growth.

As calculated in Table 2, real GDP and GDP per capita are highly correlated. This is because the population and productivity did not change much through the years. Thus, it appears that productivity is not affected by ESG performance. ESG performance can increase investment and thereby enhance economic growth while not enhancing productivity.

Table 2. International Correlations of GDP and GDP Per Capita from 2009-2023.

	U.S.A.	EU	China	Japan
Correlation Coefficient	0.9996	0.9972	0.9999	0.9947

According to the World Bank [8], a country's stock market has positive effect on the country's economic growth, as stock market liquidity is positively and significantly correlated with GDP growth. To show ESG performance, we chose the MSCI ESG universal annual index. Table 3 provides data for MSCI ESG universal annual performances for four countries. A positive trend of improving "ESG Profiles" means that there is an increasing tendency for firms to improve ESG. This is measured by the percentage increase of ESG performance over the years provided. The table depicts the performance of companies with identifiable ESG characteristics and positive trends. These indices can be used to represent the various countries' ESG changes, because the indices comprehensively include large and mid-cap companies. The table shows that there were decreases in all countries' respective performances in 2018 and 2022.

Table 3. MSCI ESG Universal Annual Performance (%).

Year	USA	Europe	China	Japan
2010	12.81	4.5		
2011	0.62	-9.9		
2012	13.28	19.42		
2013	33.27	26.11	8.6	54.11
2014	13.25	-5.37	9.18	10.19
2015	0.67	-0.88	-6.93	10.6
2016	10.94	-1.7	2.17	-0.62
2017	21.7	25.84	55.33	19.2
2018	-4.23	-14.84	-19.44	-15.15
2019	31.9	25.53	26.34	19.85
2020	21.51	8.64	30.34	9.24
2021	27.5	16.84	-20.08	13.01
2022	-19.92	-16.29	-22.6	-4.64
2023	25.76	20.39	-12.06	27.92

The declines in 2018 and 2022 might be explained by the U.S.A.'s withdrawal from the Paris Agreement in 2017 and the Omicron epidemic which started toward the end of 2019. The Paris Agreement is an international agreement, aiming to reduce pollution and protect the environment. Nearly 200 countries are signatories to the agreement, including the European Union as one country. The U.S.A.'s withdrawal from the Paris Agreement led to less overall financial support of environmental protection, causing a general fall in ESG performances. This might be proved by halted climate finance after the withdrawal. According to the Times [9], contributions promised by the Obama administration to the Green Climate Fund (GCF) were canceled. Only a small part of the \$3 billion commitment was honored. This led to a decline in ESG. To explain the decline in 2022, it is possible that the epidemic had a lagging negative effect on labor activity which is a major component of ESG performance.

Table 4 shows the annual GDP growth rate of the countries studied. In most of the years, the countries manifest positive GDP growth rates. In 2020, however, most countries manifested negative growth; there was a slight increase in growth in 2023.

Table 4. Annual GDP Growth Rates (%).

Year	U.S.A	European Union	China	Japan
2010	2.7	2.23	10.64	4.1
2011	1.56	1.9	9.55	0.02
2012	2.29	-0.7	7.86	1.37
2013	2.12	-0.08	7.77	2.01
2014	2.52	1.6	7.43	0.3
2015	2.95	2.31	7.04	1.56
2016	1.82	1.97	6.85	0.75
2017	2.46	2.84	6.95	1.68
2018	2.97	2.07	6.75	0.64
2019	2.47	1.81	5.95	-0.4
2020	-2.21	-5.65	2.24	-4.15
2021	5.8	6.01	8.45	2.56
2022	1.94	3.48	2.99	0.95
2023	2.54	0.45	5.2	1.92

We have posited that ESG implementation positively impacts economic growth and in turn ultimately produces stock market gains. This paper correlated ESG implementation with economic growth, however no identifiable lag could be determined. Given the data in Tables 3 and 4, it appears that there is a lag of approximately two years between ESG implementation and the manifestation of economic growth.

Table 5 presents the correlation matrix of ESG performance and GDP growth. ESG performance has a strong and positive relationship with economic growth, given a two-year lag.

Table 5. Correlations of ESG Performance and GDP Growth (Two Years Lag).

U.S.A.	EU	China	Japan
0.66	0.591	0.216	0.594

Table 6 shows the correlation coefficients of each country's relative ESG performance. It shows that there is a close relationship between the U.S.A. and Europe, and between Europe and Japan, but not between China and Japan.

Table 6. Correlation Matrix of Relative Countries' ESG Performances.

	U.S.A.	Europe	China	Japan
U.S.A.	1.00	0.89	0.49	0.75
Europe	0.89	1.00	0.55	0.82
China	0.49	0.55	1.00	0.33
Japan	0.75	0.82	0.33	1.00

Improvement in ESG appears to have a positive effect on future economic growth, given a two-year lag. The positive effect is stronger in developed countries, such as the USA, than in developing countries, such as China. This might be explained by investors' preferences in developed countries to more environmentally friendly, better structured, and more socially beneficial means of production.

Additionally, there is a stronger positive correlation between developed countries, such as the U.S.A and Europe, than between developed and developing countries, such as China and the U.S.A. However, as the ESG indexes cover just one decade, more data and years may present different findings. Moreover, causality between ESG and economic growth cannot be established.

4. Conclusion

There is a general growth in both GDP and ESG performances in the four countries studied from 2010 to 2023. It was found that improved ESG performance positively affects national economic growth. The correlation between ESG performance and GDP is stronger in developed countries than in developing countries. This might be caused by more attention to ESG in developed countries. Furthermore, ESG performances also are more strongly correlated among developed countries than among developed and developing countries. There is no evidence that ESG enhances productivity.

As time passes, more ESG data should become available. Future research may focus on the extent of the time lag between ESG and economic growth. Future researchers ought to consider the impacts of confounding variables on economic growth and stock market performance.

References

- [1] Alareeni, B.A., Hamdan, A. ESG impact on performance of US S&P 500-listed firms. *Corporate Governance*, 2020, 20(7): 1409-1428.
- [2] Gillian, S., Koch, A., Starks, L. Firms and Social Responsibility: A Review of ESG and CSR Research in Corporate Finance. *Journal of Corporate Finance*, 2021.
- [3] El Ghoul, S., Guedhami, O., Wang, H., Kwok, C.C. Family control and corporate social responsibility. *Journal of Banking & Finance*, 2016, 73: 131-146.
- [4] Xue, Q., Wang, H., Ji, X., Wei, J. Local government centralization and corporate ESG performance: Evidence from China's county-to-district reform. *China Journal of Accounting Research*, 2023, 16(3).
- [5] Deng, X., Cheng, X. Can ESG Indices Improve the Enterprises' Stock Market Performance?--An Empirical Study from China. *Sustainability*, 2019, 11: 4765.
- [6] Sassen, R., Hinze, A.K., Hardeck, I. Impact of ESG factors on firm risk in Europe. *Journal of Business Economics*, 2016, 86: 867-904.
- [7] Chen, G., Wei, B., Dai, L. Can ESG-Responsible Investing Attract Sovereign Wealth Funds' Investments? Evidence From Chinese Listed Firms. *Frontiers in Environmental Science*, 2022, 10: 935466.
- [8] Levine, R., Zervos, S. Stock Market Development Long-Run Growth. *World Bank Policy Research Working Paper*, 1996, 1582.
- [9] Popli, N. What Happened the Last Time Trump Withdrew From the Paris Agreement? *TIME*, 2025, January 21.