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ESG INVESTMENTS AND THEIR IMPACT ON CORPORATIONS

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Executive summary

ESG stands for Environmental, Social and Governance and it represents a set of criteria used to evaluate companies' impact on the environment, local communities and their governance practices. This article aims to clarify how ESG is becoming increasingly important for businesses of all sizes and industries, especially because it plays a crucial role in achieving equitable, ethical long-term value creation and positive reputation.

After a brief introduction to the ESG layout, the text firstly discusses the 2023 global and region-wise trend in ESG activities and its main focuses. Generally, it is highlighted how there is a trend in the Information &Technology sectors, both in the US and in Asia, to invest in sustainable practices; on the other hand, in Europe, Corporate Social Responsibility initiatives are more present in the Healthcare and Financial Industry. This section also includes the two main aspects impacted by ESG in 2023, hence value chain management and AI, along with the main updates in regulations.

The article proceeds with the future outlook of ESG investments, which will be mainly impacted by the use of technology, such as Ai and big data analytics, and by stakeholders' requests, like transparency. Other positive future trends are reported: ESG assets are expected to exceed $53 trillion by 2025 and the Green Bond market is expected to surpass $560 billion.

Finally, to asses in a complete manner the interaction between corporate world and ESG, the article will provide an analysis of Corporate Social Responsibility of Microsoft and Aramco. This analysis will lead to the conclusion that, at least for now, ESG does not determine a clear and positive impact on profitability and returns of corporations, thus remaining still majorly tackled by governments and big institutions.

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1. Introduction to ESG

1.1 ESG parameters and objectives

ESG is usually referred to as the acronym for Environmental, Social and Governance but it encompasses much more than that. According to Forbes Advisor, ESG criteria evaluate the extent to which companies protect the environment and local communities, as well as the effectiveness in meeting rigorous standards of their management and corporate governance practices. As these principles have gained importance not only for big investors but also for governments and households, many businesses, regardless of their scales and industries, are participating in the trend on integrating ESG in their business models.

Under each of the three main pillars of ESG, concrete factors have been established as guidance to formulate strategies and facilitate the achievement of enterprise sustainability. With regard to the environmental aspect, the main issues that are tackled are: carbon footprint reduction, greenhouse gas emissions, waste minimization, efficient use of energy, conservation of biodiversity. Under the social criterion, the main principles are: fair pay, equal employment opportunities, safety in the workplace and adherence to labor laws. Finally, the governance component mainly incorporates risk management, ethical business practices, board diversity and accounting integrity.

1.2 Role of ESG in corporations

In corporations, ESG has a great importance as it assists businesses in achieving equitable and ethical long-term value creation, together with building a positive reputation that attracts customer's support. Generally, business executives define the role of ESG by applying the SMART criteria: ESG goals need to be specific, measurable, attainable, relevant and time-bound in order to be implemented. More specifically, the objectives should be: precise, ideally focusing on only one aspect; quantifiable; challenging but achievable; align with the company's value and have a clear timeframe. In practice, the two mainstream methods to implement these objectives are Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB) while, to measure the actual performance of ESG projects, Key Performance Indicators (KPIs) can provide insightful information to gauge the progress.

2. ESG in 2023

2.1 Global and Region-wise trends

In order to the US scenario, the following table shows the highest weighted stocks within the S&P 500 ESG Leaders Index. It can be clearly noted how the companies defined as ESG leaders in the US are part of the Information & Technology sector. In fact, it has been estimated that, out of 207 constituents of the index, 33.1% are IT companies

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S&P 500 ESG Leaders Index	
Company	Sector
Microsoft Corp	Information Technology
Nvidia Corp	Information Technology
Apple Inc.	Information Technology
Amazon Inc.	Consumer Discretionary
Alphapet Inc A	Communication Services
Alphabet Inc C	Communication Services
Tesla Inc	Consumer Discretionary
JP Morgan Chase & Co	Financials
Unitedhealth Group Inc	Healthcare
Visa Inc	Financials

With regard to Asia, according to the Asia's FTSE ex Japan ESG fund, the trend is quite similar to the one observed in the US. In fact, Technology and Telecommunications are the industries that lead the pack in ESG indicators.

FTSE Asia ex Japan ESG		
Company	Weight	Sector
Taiwan Semiconductor Manufacturing	10.6	Technology Hardware and Equipment
Samsung Electronics	4.99	Telecommunication Equipment
Alibaba Group Holding	2.93	Retailers
Reliance Industries	2.06	Oil&Gas
Meituan Dianping	1.87	Software and Computer Services
SK Hynix	1.33	Technology Hardware and Equipment
HDFC bank	1.29	Financials
AIA Group Ltd	1.22	Insurance
Infosys	1.12	Software and Computer Services
DBS Group Holdings	0.96	Financials

Extending the comparison to Europe, a different trend can be observed from the previous regions. Out of the 196 constituents of the MSCI Europe ESG Leaders Index, companies within the Healthcare and Financial Industry sector are being given the highest weightage.

MSCI Europe ESG Leaders Index		
Company	Weight	Sector
Novo Nordisk	7.65	Healthcare
ASML Holding	7.13	Info Tech
LVMH	4.57	Consumer Discretionary
Astrazeneca	3.84	Healthcare
Novartis	3.65	Healthcare
HSBC Holdings	2.75	Financials
TotalEnergies	2.73	Energy
Unilever PLC	2.31	Consumer Discretionary
Schneider Electric	2.26	Industrials
L'Oreal	2.09	Consumer Discretionary

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2.2 ESG main focuses

ESG has and has been majorly impacted three main aspects: value chain management, companies' valuation, Artificial Intelligence.

Value chain management

First of all, one of the critical significant focuses of 2023 ESG investment is value chain risk mitigation and management. For the enterprises, supply chain management plays a crucial role in cost optimization and seizing opportunities for new investments, thus committing to better financial performance and long-term financial success. According to recent research by IBM, supply chain disruptions can cost companies between 6% to 20% in revenue loss, making undeniable the fact that supply chain management has constantly become a core ESG strategy.

Due to evolving global political disputed in 2023, companies and corporate value chains have been forced to adjust their industry distribution and navigate more complex problems. Hence, the two core directions of ESG value chain management are: mitigating value chain risks and improving value chain transparency.

A first way to tackle the above-mentioned issues is relying to international regulatory requirements. Various regions have taken practical actions to enhance value chain management regarding ESG issues. Moreover, regulations are combining goals on value chain transparency with the ones for net-zero industrial capacity, like controlling traditional fossil fuel usage and promoting renewable energy. In other words, value chain management has been well integrated with industry reformation and optimization under the mass ESG strategy framework. As it will be also analyzed later, one example is the Corporate Sustainability Due Diligence Directive by EU, according to which companies and their subsidiaries are obliged to consider and report adverse impacts throughout their value chain, including upstream and downstream activities, instead of just after-coping with problems.

The second method involves data management and analysis improvements. When it comes to the data management process during value chain operations, concerns around gaps and transparency are still discussed in 2023. Utilizing vendors' and suppliers' information is highly valued for realizing ESG purposes, especially when the company has a massive scale and decentralized layout. However, the company could still face issues regarding how to make use of the information wisely and conceivably.

Companies' valuation

According to the CFA Institute, ESG factors seem to have a direct effect on the discount rate of a company. As corporations score poorly in ESG metrics, their discount rates are increased, hence the business is deemed to have a higher risk profile on average, reducing its value. Moreover, a further study by Deloitte has proven how a 10-point higher ESG score is on average associated with an approximate 1.2x higher EV/EBITDA.

These general assessments have found real life concretization in Australia, where PWC confirmed the fact that ESG leaders usually outperform lower-rank peers in terms of valuation, which has a positive impact in striking M&A deals.

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Artificial Intelligence

The application of Artificial Intelligence (AI) had a significant impact on ESG 2023 performance. Overall, AI application is ESG business development can be roughly divided into two broad directions: technology and financial assistance.

For technological analysis and insights, AI serves as a powerful tool for data tracking, predicting and monitoring the following processes:

- Greenhouse gas (GHG) emissions
- Inventory management and logistics
- Compute optimization and energy-saving practices
- Production process waste monitor
- Asset health and environmental impact prediction

With regard to financial assistance, AI helps accelerate the company's sustainable progress by analyzing financial performances and predicting long-term success, including assessments of broad environmental and social risk or success factors. In fact, ESG analysis has been integrated with Fintech topics, helping building more comprehensive and ESG-oriented financial models.

2.3 Updates in regulations

In 2023, the main regulation updates were introduced by UK, Europe and Mainland China. Apart from the specific countries, taking a look at the international landscape, IFRS first introduced this year a global baseline of disclosure standards to facilitate consistent and comparable communication on risks and opportunities related to sustainability and climate, referred to as IFRS S1 and IFRS S2 respectively.

Starting off with UK, the country's FCA (Financial Conduct Authority) has provided three labels that companies must assess before describing themselves as ESG-oriented:

1. "Sustainable Focus": at least 70% of a company's assets need to meet a credible standard of environmental or social sustainability
2. "Sustainable Improvers": investments in sustainable products have to aim to the improvement of social and environmental sustainability over time
3. "Sustainable Impact": investments solutions need to clearly identify the positive and measurable real-world impact

Moreover, FCA created an anti-greenwashing rule to help ensure that sustainability-related claims made by authorized firms about their products and services are fair, clear but most importantly not misleading and consistent with the sustainability profile of the product or service.

With regard to Europe, the Council and EU Parliament reached a deal on the "Corporate Sustainability Due Diligence Directive", also called CSDDD, which aims to enhance transparency in sustainability for European countries. The main obligation resulting from this directive for companies to carry out meaningful engagement with stakeholders with regard to their ESG efforts, including dialogues and consultations. The agreement fixes the scope of the directive on large companies that have more than 500 employees and a net worldwide turnover of over €150 million, For non-EU companies, it will

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apply if they have over €150 million net turnover generated in the EU, three years from the entry into force of the directive. Failure to adopt to transparency standards will result in a pecuniary penalty of 5% of the company's net turnover.

Finally, in China, the Ministry of Ecology and Environment, along with the State Administration for Market Regulation, relaunched the CCER, hence the China Certified Emissions Reduction scheme, which was previously suspended for over 6 years. All projects applying for CCER should essentially respect the principle of emission reduction in two ways: carbon mitigation, by reducing existing GHG emissions; carbon sequestration: increase the absorption and removal of GHG.

3. 2024 Outlook

3.1 Main factors of influence

In the year 2024, ESG investments will undergo some changes, influenced by factors that impact both profitability and sustainability. The following examination investigates emerging trends and regional dynamics. By exploring expected investments, returns and regulatory advancements in ESG, the goal is to offer a perspective of the future ESG landscape for stakeholders.

The first factor that will play a big role in enhancing profits through ESG initiatives is the utilization of technology such as AI and big data analytics. AI powered tools provide insights into the environmental and social implications of investments which could probably disrupt the conventional and adopted view on ESG principles. Predictive machine learning could help to forecast changes in performance and profitability, by assisting investors in promoting investment practices and prioritizing assets. Moreover, from the point of view of stakeholders, digital platforms will start to incorporate technology to improve transparency and enable real time monitoring capabilities.

Another factor that stands out as an element in driving profitability through ESG endeavors is transparency. Stakeholders are increasingly demanding transparency, encouraging companies to adopt advanced sustainability and reporting practices and to make concrete efforts, like adherence to reporting standards like GRI and SASB. These adaptations are mirroring a shift towards sustainable business behaviors, driven by technology advancements and stakeholders' expectations; hence, it is clear that companies, that will adapt to these changes, are going to enhance their long-term sustainability and profitability.

3.2 Global and Region-wise trends

Globally, ESG assets are expected to exceed $53 trillion by 2025, making up over a third of assets managed globally. Looking forward to 2024, the momentum in ESG investments remains strong, as companies are expanding the ESG market by embracing transparency, innovation and adherence to regulations.

In USA, Biden administration is strongly focused on corporate responsibility, which will encourage companies to adopt ESG strategies. In fact, regulatory actions are aimed at preventing environmental claims and ensuring the credibility of sustainability efforts, which is pushing businesses to strengthen their governance frameworks.

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In Europe, the main focus is the ESG fixed income market, where Green Bonds have seen an increase surpassing $560 billion by the end of 2023. Regulation will move forward to increase alignment and standardization, working out Green Bonds strategies to clearly define objectives and attract investors. The first step is going to be the implementation of EU Green Bond Standard in 2024, which will satisfy the growing investor demand for transparency and trustworthiness.

4. Analysis of ESG impact on corporations

Based on the analysis carried out, it is safe to say that high-tech companies and oil companies are two businesses' types that are most greatly affected by ESG. Therefore, to evaluate corporate involvement with environmental and social governance, this paragraph will evaluate two companies: Microsoft and Aramco

4.1 Microsoft

Microsoft has been a major technology service company since the internet boom in the 1900s. Its Azure Cloud Service is becoming the new profit machine for the company and its investing activity in Natural Language Processing gives Microsoft an exclusively primal position in the AI landscape. These services are extremely resource and electricity demanding, since Microsoft buys a lot of hard disks and GPUs, along with high usage of watery and energy to maintain the Deep-learning models.

Microsoft's basic approach to sustainability basically tackles both the long and short term ESG goals for the company and general society. The company aims at achieving sustainability of customers and of global society by first making itself ESG-oriented, amplifying the effects using their technology and influence. Their approach is structured in the following way:

- Set commitments based on science recommendations
- Consider all positions of influence
- Establish sustainability as part of the business culture and make ESG central to company's concerns
- Ensure governance and accountability
- Report on every details of ESG activities, not just the pure data

Recently, Microsoft achieved some progress on environmental sustainability. Its green-house gasses emission intensity, estimated through millions of tons of C02 divided by $million revenues, was 82.7 in 2020, rose to 85.6 in 2021 and slightly decreased to 84.6 in 2022. Some major projects concerning ESG recovery and redemption include: carbon removal contracting, water replenishment projects, solid waste diversion and ecosystem recovery.

As one of the big-tech corporations, Microsoft has a lot of advantages on achieving ESG goals. It has the top talents, technologies, patent stocks and huge amount of cash flows from revenues that can be used as multipliers when Microsoft takes decisions on ESG, facilitating their process on sustainability by enhancing efficiency through innovative solutions. The following list contains an examination of the main advantages of Microsoft.

1. Substantial stock of talents and technologies → As a leading technology company, Microsoft has a lot of top talents and researches, as well as R&D resources. It can fully utilize these resources to innovate operation cycles and make them more efficient, reduce resource-waste and enhance

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sustainable business operations. For example, to reduce water usage for the cooling down of data centers, Microsoft adopted water reduction technologies which introduce a two-phased liquid immersion cooling process and utilize outside air to cool servers.

2. Extensive servicing connection → The business model of Microsoft is quite varying, ranging from classic Windows systems, cloud storage and computing, Microsoft Office and recently also AI. The extensive net of Microsoft services allows Microsoft to integrate the strength of different products and enhance their ESG efficiency, along with spreading awareness and connecting consumers to ESG principles. For example, the company helps customers optimize their use of cloud storage in Azure Cloud service, along with reducing their carbon footprint by helping them develop green software. Microsoft also has an exclusive place to collect many data from individual and corporate level customers, which, if well managed and analyzed, can generate valuable ESG insights

3. Strong bargain power → being the largest internet company given Microsoft much bargaining power on its suppliers, like influencing them on decarbonization and transparency towards stakeholders

4. Leader in AI sector → Microsoft has a high potential with regards to AI, which could be used as an impact multiplier on ESG. For instance, this new technology could e used for resource optimization and data analysis

Microsoft has also some vulnerabilities, since the maintenance of daily operations of Microsoft actually consumes lots of resources. First of all, there is an inherent unsustainability of the business model itself. The gigantic amount of hard disk and servers inside datacenters are manufactured with semiconductors, which use a lot of water and energy to be produced: their production cannot be changed in the short term. The operation cycle also requires lots of electricity and water for cooling down. These aspects cannot be quickly resolved using occasional innovative amendments but a huge revolution in efficient computing is required, which cannot be achieved by Microsoft alone. The business nature of being an internet company makes Microsoft partially incompatible with the aim of having a complete ESG-integrated business model, given also the fact that, being a big-tech enterprise, their speed to adopt to sustainability is certainly slower than for small companies.

4.2 Aramco

Aramco's commitment to ESG principles is underscored by its consistent top ranking in the Corporate Knights Global 100 most sustainable corporations index for the past 4 years. This reflects not only ARAMCO's strong ESG framework but also its tangible efforts toward sustainability. In fact, the company has announced its commitment to reduce greenhouse emissions by 50% by 2030 and achieve net-zero by 2050. By 2023, the company is also targeting to increase their investments into renewable energy sources, targeting a non-fossil fuel capacity of 100 gigawatts, equivalent to the 10% of Saudi Arabia's total energy generation.

Generally, Aramco wants to promote circular economy by reducing waste, increasing recycling and developing sustainable products as well as commit to responsible water management. Furthermore, it aims to a strong corporate governance framework to promote transparency, accountability and ethical conduct.

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Aramco's investments into social factors are defined by two key pillars: People and Planet. The company supports people in terms of knowledge, creativity and socio-economic development and helps the planet by prioritizing the protection of diverse biospheres, reforestation, coral reef regeneration and many more. In 2022, Aramco boosted social investments of $370 million both in Saudi Arabia and abroad. For example, in Asia, Aramco supported 11 organizations with various environmental, educational, social and medical initiative, along with funding non-profit organizations such as the CCAFC in China and the Global Environment Center in Malaysia.

With specific regard to the environment, Aramco has made significant strides in reducing its carbon footprint. The company's upstream carbon intensity of 10.3 kg CO_2/BOE signifies a relatively lower environmental impact compared to the industry benchmark of 18 kg CO_2/BOE, along with the decrease in greenhouse gas intensity for exploration and production activities from 22.4 to 17.6 tCO_2e. One of Aramco's standout initiatives is the establishment of a $1.5 billion USD sustainability fund in 2022. This fund is dedicated to investing in technology solutions aimed at mitigating climate risks, focusing on Aramco's decarbonization and lower carbon energy solutions. This fund builds up on top of Aramco Venture strategic venturing program, which is labeled as a technology investment fund and currently the largest sustainability-focused venture capital program in the Oil&Gas industry and globally.

On the other hand, Aramco also suffers some ESG vulnerabilities. Aramco by nature is an oil company which relies on traditional fossil fuels. This poses a threat to its long-term sustainability goals, especially in the context of reducing carbon emissions. A real example of this issue is oil spillages. Aramco reported an increase in oil spill cases from 2 in 2020 to 15 in 2022. These incidents not only pose environmental risks but also damage the reputation of the company as a leading sustainable company, which can erode stakeholder trust.

5. Conclusions

ESG is still a relatively new concept such that its effect on companies, in terms of cost, return on equity and expected return, is still not very clear. ESG effect on companies cannot be carried out only by a micro-approach, since the effect of not pursuing ESG-strategies in the short term is very minimal and, looking at an equilibrium situation, highly-rated ESG stocks will have greater values by attracting more funds but investors will have to be satisfied generally with a lower expected return. On the other hand, ESG could serve as signaling in the case of companies that perform terribly in ESG activities, especially in the governance and social aspects.

Generally, it can be broadly stated that those companies who score high in ESG ratings perform better simply because, being larger in terms of scale and revenues, they have the extra resources to invest more in Corporate Social Responsibility. The only exception is governance, since a good governance makes a company more efficient, enhancing the return rates and its profitability.

One final remark can be done in regard to the long-term and macro aspect of ESG investments. If the whole economy does not improve its involvement in sustainability, the whole economy will suffer due to extreme climate events, decreased buying power due to unequal income distribution and other negative influences. For these reasons, ESG is a concept that is usually led by governments and large institutions, since they have the most direct need to handle the risk of not investing in ESG. As a consequence, companies related to institutional decisions will be most significantly affected.

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