



**Universidad**  
Zaragoza

## Final Dissertation Project

# Environment, Social and Governance (ESG) and Fund Performance in the Spanish Venture Capital Ecosystem

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## Abstract

This paper pretends to create a framework that allows to analyze and compare Spanish Venture Capital (VC) funds, and any other funds using strategies amongst the lines of Private Equity (PE); under cohesive and simplified Environment, Social and Governance (ESG) grading system, as well a performance analysis following the business model of these alternative investments.

The purpose of the study is to find a relationship between ESG compliance and economic performance. This is done through the ranking of a sample of Spanish VC firms according to the extent of which they include green policies and practices in the different levels of their operational scheme and crossing the data to a sample of investments carried out during the fund's lifetime. The conclusion of the study will be to set a possible correlation between the two.

The main reason why efforts have been dedicated to reveal a possible link between these two variables is to find out whether a responsible investment policy offers similar returns as to a regular investment policy, unveiling the possibility for funds who follow these strategies to fully focus on developing and implementing these policies into their scheme. Thus, making the VC industry an advocate for the movement, taking care of the future while generating opportunities for the present.

*Key words:* Venture Capital, Private Equity, Environment, Social and Governance, responsible investment policy.

## Resumen

Este artículo tiene como objetivo crear un marco que permita analizar y comparar los fondos de Capital Riesgo (CR) en España y cualquier otro fondo que utilice estrategias similares a las de Capital Privado (CP), bajo un sistema coherente y simplificado de calificación Ambiental, Social y de Gobernanza (ASG), así como un análisis de rendimiento siguiendo el modelo de negocio de estas inversiones alternativas.

El propósito de este estudio es encontrar una relación entre el cumplimiento de los criterios ASG y el rendimiento económico. Esto se logra mediante la clasificación de una muestra de firmas de CR en España según el grado en que incluyen políticas y prácticas sostenibles en los diferentes niveles de su esquema operativo, y cruzando los datos con una muestra de inversiones realizadas durante la vida del fondo. La conclusión del estudio será establecer una posible correlación entre ambos.

La razón principal por la que se han dedicado esfuerzos a revelar un posible vínculo entre estas dos variables es determinar si una política de inversión responsable ofrece rendimientos similares a una política de inversión regular, desvelando la posibilidad de que los fondos que siguen estas estrategias se centren plenamente en desarrollar e implementar estas políticas en su esquema. De esta manera, esta industria del Capital Riesgo se convierte en defensora del movimiento, cuidando del futuro al tiempo que genera oportunidades en el presente.

**Table of contents**

|                          |    |
|--------------------------|----|
| Acknowledgements .....   | 1  |
| Abstract .....           | 1  |
| Resumen.....             | 2  |
| 1.    Introduction ..... | 4  |
| 2.    Objective .....    | 7  |
| 3.    Methodology .....  | 9  |
| 4.    Results .....      | 19 |
| 5.    Conclusions .....  | 27 |
| 6.    Limitations .....  | 29 |
| 7.    Bibliography.....  | 29 |

## 1. Introduction

Every company that has ever contributed to shaping the economy and helped our society thrive started at some point. Entrepreneurs are able to produce the ideas that move the world, but often lack managing skills, financial resources or other key elements to run successfully a business. Many of those companies needed the support and knowledge of an external body to develop their potential and grow to be well-known and respected brands like *Glovo*, *Cabify* or *Wallbox*. Companies like these dictate and improve the way we eat, move and live, and they have one thing in common, they were backed by Venture Capital firms.

The impact Venture Capital has on the United States is highly noticeable, as one-fifth of the public capitalization companies were backed by Venture Capital firms. In addition, 44% of the research and development spending of the country's public companies was destined to VC backed companies. The role these firms play in the economy is becoming stronger as more young startups need financial and nonfinancial support from them. (Gornall & Strebulaey, 2015)

The Venture Capital industry's traditional notions of investment success, primarily driven by profit margins and market growth, are being reevaluated in the face of a global shift towards looking out for the future. It is no longer enough just to expand and grow businesses to collect their proceeds, which is challenging and changing this whole ecosystem to build their portfolios judging not only the financial health of a startup, but also their environmental, societal and governance possible hazards (World Economic Forum, 2022).

This is no new matter, since the 1960s and 1970s we started forming the first actions and views on socially responsible investments. Today's efforts of shaping each industry into a sustainable one is only the natural progression we could expect (TechTarget, 2023). Added up to the time restrictions our society must turn things around, several international governance bodies such as the European Union (EU) have set up a series of regulations to reach the desired status to achieve the sustainability goals set by higher. Some of these actions include (Euronext, 2022):

- Climate Benchmarks Regulation (EU 2019/2089): Enhances the transparency and comparability of benchmark methodologies relating to environmental, social, and

corporate governance (ESG) metrics, providing investors with clarity on the environmental sustainability of their investments.

- Sustainable Finance Disclosure Regulation (EU 2019/2088): Re-orient capital flows towards sustainable investments by increasing transparency by financial market participants and advisers on sustainability risks, while ensuring a more uniform protection of end investors.
- Taxonomy Regulation (EU 2020/852): Establishes a harmonized taxonomy to classify financial products as sustainable at EU level, further promoting investments in sustainable activities while addressing “greenwashing” concerns.

Even though none of these fully cover the nature of alternative investments, which are the focus of this study, there has already been a few actions in the VC world such as the ESG in VC1 initiative, which aims to gather learnings, views, and opinions from people and organizations who care about ESG issues and help each other play a role in addressing the environmental crisis and securing a fairer society or ESG\_VC2 which helps early stage startups and their investors to understand and improve their ESG performance; and noticeable efforts towards building a consistent ESG framework across Europe.

Most papers find inconclusive results when analyzing ESG and performance side by side, but there are some that do shed some light in this topic. Researchers state that ESG screening does not hurt performance, and improves risk-adjusted returns. In certain financial instruments, like while trading stocks; ESG screening also reduces tail risk, making the company less likely to suffer an extremely negative daily return. (Verheyden, Eccles & Feiner, 2016)

Furthermore, it is demonstrated that through the creation of transmission channels, valuation and performance of companies, both their systematic risk profile and idiosyncratic risk profile has improved and returned more optimal figures. ESG characteristics inclusion is a multichannel process. (Giese, Lee, Melas, Nagy & Nishikawa, 2019)

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<sup>1</sup> See [ESG in VC \(esg-in.vc\)](https://esg-in.vc) visited in September 2023

<sup>2</sup> See [ESG VC \(esgvc.co.uk\)](https://esgvc.co.uk) visited in September 2023

Now that an overview on what ESG means for this sector, it is time to dig deeper into what Venture Capital is, how it works and the key mechanisms of their business model which will be used throughout this study.

Venture Capital is a type of private equity<sup>3</sup> financing that investors provide to startup companies and small businesses that are believed to have long-term growth potential. In exchange for the investment, venture capitalists receive an ownership stake in the company and significant influence over its operations. These firms typically invest in companies that are in their early stages of development.

One of the most important metrics that determines the quantity invested in the company and the target stake purchase is the stage in which it is made. Depending on the maturity of the startup and the capital and managerial resources needed, the startup might decide to look for assistance of a certain type or scale. Although maturity of the business is a good metric to know how much capital should be invested in it, financing rounds really bear in mind the risk financial institutions are exposing themselves to (Investopedia, 2023). The rounds, organized from smaller and riskier to larger and more stable go as follows (TooMuchCoffee, 2021):

- **Seed:** The seed round is the initial stage of funding for a startup. It occurs in the very early stages when the company is often just an idea or concept. Seed funding is used to develop a prototype, conduct market research, and build the foundational elements of the business.
- **Angel:** The angel round is typically the first formal round of financing that follows the seed stage. Angel investors, who are typically affluent individuals, provide capital to startups in exchange for equity. This round is used to further develop the product or service, scale operations, and prepare for more substantial funding rounds. The size of these kinds of investments is maximum € 1M.
- **Series A rounds:** At this stage, startups have demonstrated market traction and are seeking significant funding to accelerate growth, expand into new markets, and scale their operations. The size of these rounds is usually between €1M and €7M.
- **Series B, C and subsequent rounds:** These rounds occur as a startup continues to grow and requires additional capital to further scale its operations, enter new

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<sup>3</sup> Private equity refers to ownership in an entity that is not publicly listed or traded.  
<https://www.investopedia.com/articles/financial-careers/09/private-equity.asp>

markets, or make acquisitions. The focus is on expanding and solidifying the company's market position. The size of these rounds is usually +€5M.

- Exit: represents the culmination of a startup's funding journey. It includes events such as an Initial Public Offering (IPO) or acquisition by a larger company. The exit round provides liquidity to investors, allowing them to realize returns on their investments. It marks the point at which early investors and founders may "exit" their positions in the company.

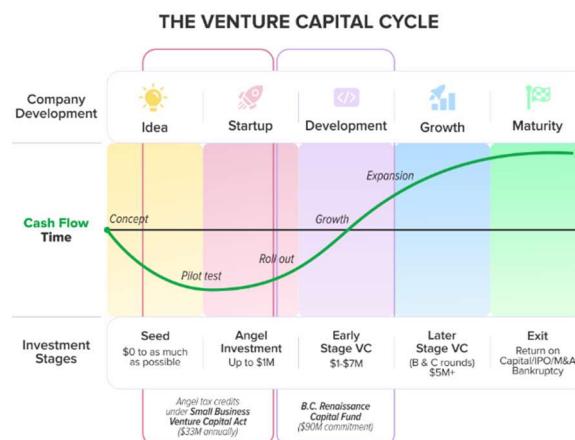


Figure 1.1. Startup Funding Cycle

Now that the role and functioning of Venture Capital has been defined, a base of academic papers that supported this study, and have already started building literature towards finding a relationship between ESG and VC will be described.

## 2. Objective

In today's business landscape, the role of VC firms in shaping the trajectory of emerging companies and fostering innovation has become increasingly prominent. As mentioned in the introduction section of this dissertation, traditional investment success was only measured by economic performance, which is the main goal of any business. Given the requirements and following the responsible trend that the whole ecosystem is complying to, new measures of success arise.

Reaching entrepreneurial success has undergone a notable transformation when compared to a decade ago. Presently, our society shows an increased preoccupation and heightened awareness regarding the consequences that economic activities impart upon both our physical and socio-cultural environment. In this outlook, the Venture Capital

plays a crucial function as a role model and filter for startups to focus on winning on not only the economic side, but also thriving on the ESG side.

This dissertation has 3 ultimate goals, which are subsequent. The first goal will be to create a framework applicable to those companies who follow the investment practices that a Venture Capital firm is known to do. Using this framework, a grading system will be developed to be able to rank all the firms included in the sample, thus giving us a list of the firms that comply the most with ESG requirements and the ones who do not.

The second goal of the dissertation will be to carry out a performance analysis on every sampled firm's investment. Having a solid performance index, built with data collected from the actual transactions and using a financial model to cover the few assumptions needed, will be the second pillar of the ultimate objective.

Ultimately, the goal of the whole exercise will be to draw a relationship between these two variables obtained. From a business point of view, it is not as easy to start acting towards changing your activity into a more responsible business model. The mainstream transition will not fully occur until there is some sort of economic incentive for companies to go green, this is where this study fits that thought process. The main question of this dissertation is the following: is there a relationship between ESG focus and economic performance in the Spanish Venture Capital ecosystem?

The reason behind placing efforts to answer this key question is to help shift the direction of our companies and financial institutions into what our society needs now and will need in the future. Several environmental goals, like the United Nations' 2030 Agenda and its Sustainable Development Goals (SDGs)<sup>4</sup> have been put into action, and being high impact sector, Venture Capital should be one of the strongest advocates of these initiatives.

Following basic mainstream economics notions on opportunity cost, the economic agent is a utility-maximizing individual functioning mechanically (O'Boyle, 2020). Though there has been extensive research proving the non-rational nature of the human being generated by biased perceptions and judgements (American Psychologist Association, 2020), the exercise will stick to the assumption that individuals choose to invest in the product that offers the highest payout at the risk level decided.

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<sup>4</sup> See <https://sdgs.un.org/2030agenda> visited in September 2023.

The decision of working under an extremely pragmatical view of the private investor is precisely to have a solid understanding of the economic opportunity cost of responsible investments. This dissertation's focus does not try to find an answer or relationship between investor's biases and their investment selection, but rather a cold perspective on economic performance.

What this exercise tries to do is to dissect the landscape of VC investments by separating them from emotional or biased assessments, eliminating the behavioral portion of investing<sup>5</sup>. Instead, the focus is entirely on evaluating these investments solely through the lens of economic performance. By doing so, we endeavor to pinpoint a critical juncture where responsible investments, rooted in ESG principles, exhibit superior performance when compared to their more conventional counterparts.

This research seeks to identify a point where investments in environmentally responsible companies not only meet but exceed financial expectations. It aims to build a convincing argument, supported by real-world data, demonstrating that even traditional investors should seriously consider allocating a sizable portion of their investments to companies that prioritize both environmental responsibility and financial strength.

In a world marked by increasing environmental concerns, deep societal disparities, and a growing demand for ethical business practices, this study serves as a call to action. It endeavors to bridge the gap between profit-driven investments and those guided by ethical and sustainable principles. As we navigate the complex landscape of venture capital, the mission is guided by a single conviction: responsible investing is not just an idealistic pursuit; it is a practical and astute financial decision.

### 3. Methodology

#### *3.1. Methodology overview*

For the methodology of this study, a 4-step process was followed, this next paragraph will offer an overview on how the study's process was carried out.

Firstly, the sample size and details were selected, with the aim of covering funds of varied sizes and approaches. Secondly, a first variant which represented the level of ESG focus

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<sup>5</sup> See [Behavioral Finance: Biases, Emotions and Financial Behavior \(investopedia.com\)](https://www.investopedia.com/terms/b/behavioral_finance.asp) visited in September 2023

of each fund was obtained from the creation of a framework and a grading system according to it. Thirdly, a second variant which represented different economic performance metrics was obtained through building a financial model. Finally, taking into consideration the different variables obtained through descriptive and quantitative data, a relationship study was carried out and conclusions were drawn from it.

### *3.2. Sample selection and details*

A selection of 13 distinct Spanish VC firms has been selected for the purpose of exploring the intersection of VC practices and ESG considerations. The rationale behind the inclusion of these firms lies in the desire to ensure a representative and diverse sample, aimed at preventing potential biases in the study's findings. To achieve this, the decision was made to rely on an up-to-date Spanish VC Ecosystem report published in April 2023. This report serves as a reliable reference point, providing a contemporary overview of the Spanish VC landscape (DealRoom, 2023).

The selection process pretends to account for VC firms of varying sizes and investment approaches. Within this selection, well-established industry leaders alongside emerging players can be found, insisting on avoiding sample bias. Moreover, the sample encompasses entities with an already pronounced commitment to ESG principles, as well as those that are in the process of integrating ESG into their investment strategies.

For the sake of eliminating any possible biased analysis and conclusions, each firm will not be labeled by its name, but rather under a number from 1 to 13. This will help the study be as transparent as possible and evaluate firms solely under data relevant to the thesis. In addition, since a portion of the data will be fabricated using assumptions and a financial model, this study does not wish to set performance metrics of these funds as benchmarks for future reference.

### *3.3. ESG Focus Grading*

To evaluate and quantify the extent of ESG focus within the operational scheme of Spanish VC firms under a consistent set of measurements, a comprehensive grading system was built. The system looks to assess the focus from the inside out, considering efforts made inside the firm itself, implementation of ESG standards in their portfolio and investment thesis and up to the aim to build literature on the matter through a public reporting process.

At its core, the grading system assigns a maximum of 10 points, reflecting the spectrum of ESG dedication within each VC entity. This approach is guided by the conviction that evaluating ESG efforts demands an intricate understanding of a firm's internal dynamics, strategic orientation, and active engagement with sustainability principles.

Within this framework, one point is allotted as a foundational marker to VC firms demonstrating a baseline commitment to the economic landscape. There is no firm considered in this sample that actively makes efforts against being more sustainable in any of the ways considered throughout the study, so this first point will serve as parting position for every firm.

The following points are given out as the degree of integration of ESG practices is more present in each layer of the firm. The 3 layers where the rest of the points were divided are: the own firm's composition, team and internal practices; followed by its investment policy, responsible investment record and portfolio; and the third and final layer is to contribute to the development of these standards for the rest of the industry by having embarked in any sort of ESG reporting.

Up to three points were given to those firms who demonstrated a basic integration of ESG standards within their lines. This is demonstrated through having a diverse team, including a ESG section in their webpage, hosting initiatives towards Sustainable Development Goals (SDG) and other basic set of actions that the firm has indulged in.

Examples of this basic standards being implemented go from offering ESG trainings and education to their employees to diverse and inclusive hiring to building a sustainable office and many other practices. These values can also be supported by certifications on certain matters, like the Diversity VC Standard<sup>6</sup>, which is an assessment of a VC recruitment, culture, dealflow, and portfolio guidance policies compared to Diversity, Equity & Inclusion (DEI)<sup>7</sup> best practices.

However, the grading system ventures far beyond the basics, recognizing the role played by the activity within a VC firm. Three additional points are attributed to those firms that exhibit the presence of an ESG-friendly Investment Policy, which is a set of guidelines or principles that aim to align an investor's portfolio with ESG criteria. These criteria are

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<sup>6</sup> See [Diversity VC Standard – Diversity](#) visited in September 2023.

<sup>7</sup> See [What Diversity, Equity, and Inclusion Really Mean \(ideal.com\)](#) visited in September 2023

used to evaluate the performance and impact of companies on various issues such as climate change, human rights, diversity, ethics, and sustainability.

There are several ways to implement an ESG-friendly investment policy, depending on the investor's objectives, constraints, and preferences (European Investment Fund, 2020). Some common methods are:

- Exclusionary screening: This involves excluding certain sectors, companies, or practices that do not meet the investor's ESG standards or values from the investment universe.
- Best-in-class selection: This involves selecting companies that have the highest ESG ratings or scores within their industry or peer group, based on a predefined set of criteria or indicators.
- ESG integration: This involves incorporating ESG factors into the financial analysis and valuation of companies, alongside traditional financial metrics.
- Thematic investing: This involves investing in specific themes or sectors that are related to ESG issues or goals, such as clean energy, water management, or social impact.
- Impact investing: This involves investing in companies or projects that have a positive and measurable social or environmental impact, in addition to generating a financial return.

Lastly, the grading system extends a final tranche of three points to VC firms that have actively participated in ESG reporting. This dimension underscores the commitment of VC entities not only to internal ESG principles but also to external transparency and accountability. ESG reporting signifies a proactive approach to communicating ESG performance to stakeholders, reflecting a commitment to ethical and sustainable investment practices.

This reporting discipline is the latest ESG driven action and the one that gives the firms that do so, an excellent status in the scoring system. The reason behind allocating points to ESG reporting is because it is an effort that does not look for revenue or performance at all, making the firms that do take the time to develop a report the ones that are considered to take these matters more seriously.

Full points of the section were given to all those firms who prepared their own report and half of the points were given to those firms who contributed to building one together with other entities, banks or financial institutions.

Large business and finance related platforms have proposed their ESG grading methodology, where they take into account publicly available information to obtain a score for each firm. Well known ESG scores break down the method into environment, social and governance sections, calculating a score for each of those attributes and then obtaining an aggregated figure that determines the total score<sup>8</sup>.

The system used for this study employs a similar method, but instead of breaking down the firm by the ESG trifecta, it uses a different approach to the firm. Through the dissection of the operational parts of the firm, a score is obtained and then an aggregated value is used as the total score. Same procedure, slightly different approach that is believed to adapt better to the VC industry for different reasons. The scarcity of public information, the functioning of a firm, the VC business model, or the lack of consistency in the grading system used by each firm are a few of the reasons why a new a consistent scoring system was needed.

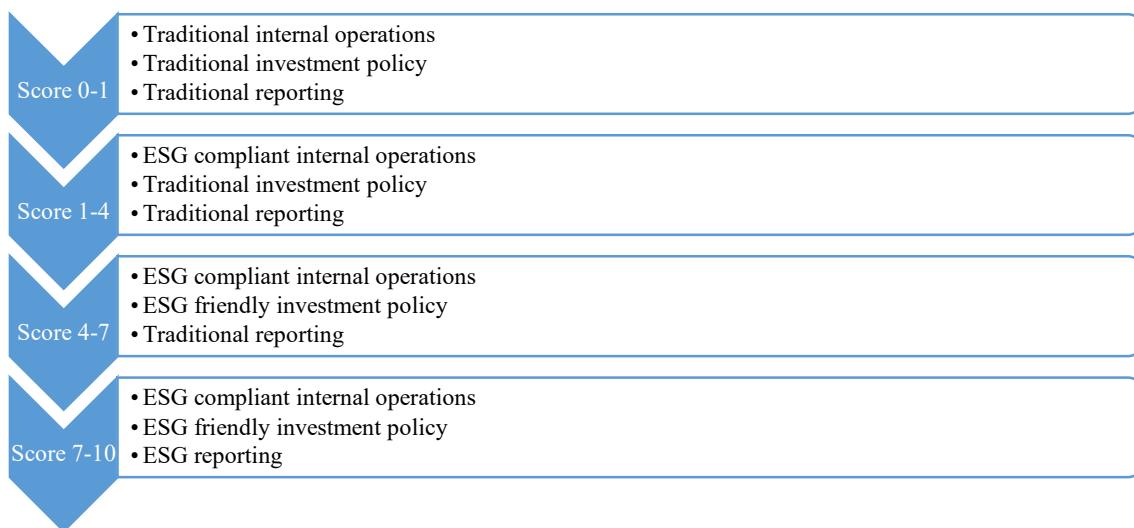


Figure 2. ESG scoring system visualization (Author's elaboration)

<sup>8</sup> See [ESG Ratings and Corporate Sustainability Performance - A Primer \(nordesg.de\)](https://nordesg.de/) visited in September 2023

### 3.4. Economic performance grading

To explain how performance was measured in this study, it is key to explain how a VC firm works from the inside, this will be used to build a set of assumptions that will allow the study to model reality in the closest manner possible.

The business model of a VC firm is based on investing in high-growth potential start-ups and generating returns through value creation or exit events. A VC firm typically raises a fund from limited partners (LPs), such as banks, pension funds, or foundations, and uses that capital to finance a portfolio of start-ups in exchange for an equity stake. The VC firm also charges a management fee, usually around 2% of the fund size, to cover its operational costs.

The main source of income for a VC firm is the carried interest, which is the share of the profits from the fund that goes to the VC firm after returning the initial capital to the LPs. The carried interest is usually around 20% of the fund's net profits, which means that the VC firm receives 20 cents for every dollar of profit generated by the fund<sup>9</sup>.

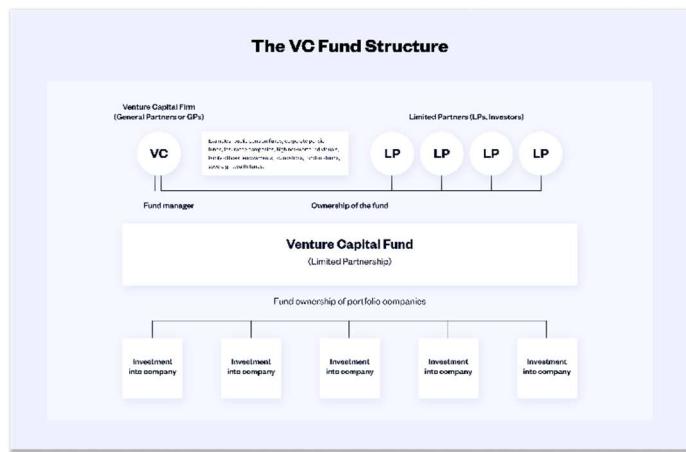


Figure 3. Venture Capital Fund Structure (Cyclic, 2022)

The VC firm can realize these profits by exiting its portfolio companies, either through an initial public offering (IPO) or a merger and acquisition (M&A) deal. An IPO is when a portfolio company sells its shares to the public for the first time, and an M&A is when a portfolio company is bought by another company. Both events can generate a large amount of cash for the VC firm and its investors, depending on the valuation and the stake of the portfolio company. However, exits are not guaranteed, and they can take a long

<sup>9</sup> See [Demystifying funding: Understanding the VC business model | by Rohit Bhargava | Medium](#) visited in September 2023

time to happen, usually several years after the initial investment. Therefore, the VC firm must be patient and strategic in choosing when and how to exit its portfolio companies.

Alternatively, the VC firm can increase the value of its portfolio companies by helping them grow and achieve milestones, such as product development, customer acquisition, or revenue growth. These milestones are indicators of the progress and potential of the portfolio companies, and they can attract more customers, users, partners, and investors. The VC firm can provide various forms of support and guidance to help the portfolio companies reach these milestones, such as capital, expertise, mentorship, network, and resources. The VC firm can then mark up the valuation of its portfolio companies based on their performance and market conditions. The valuation is the estimated worth of the portfolio companies in the financial market, and it reflects their current and future prospects.

The performance of a VC firm is measured by various metrics that capture the return on investment and the value creation for the LPs and the VC firm. Two of the most common metrics are internal rate of return (IRR)<sup>10</sup> and total value to paid-in capital (TVPI)<sup>11</sup>. IRR is the annualized effective compounded return rate that makes the net present value of all future cash flows from the fund equal to zero, it is a useful metric for comparing the performance of a VC fund to other asset classes or indexes. It reflects the time value of money and the timing of cash flows, such as capital calls and distributions.

TVPI is the ratio of the total value of the fund to the total capital invested. It reflects the multiple of money that the fund has generated for its investors. TVPI can be decomposed into two components: realized TVPI and unrealized TVPI. Realized TVPI is the ratio of the cash distributions from the fund to the capital invested, and it reflects the actual cash returns that have been realized through exit events. Unrealized TVPI is the ratio of the net asset value (NAV) of the fund to the capital invested, and it reflects the potential cash returns that have not been realized yet.

The performance of a VC firm is also affected by various factors, such as its deal sourcing, selection, and structuring capabilities, its post-investment management and support for

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<sup>10</sup> See [How Venture Capitalists Measure Returns — The Holloway Guide to Raising Venture Capital](#) visited in September 2023

<sup>11</sup> See [Total Value to Paid-In Capital \(TVPI Multiple\) | Formula + Calculator \(wallstreetprep.com\)](#) visited in September 2023.

its portfolio companies, and the market dynamics and exit opportunities for its portfolio companies.

Due to the lack of internal information of each VC firm studied in the paper, the performance analysis of the paper will be based on the TVPI metric. To calculate the TVPI, the paper will use a valuation of each invested company at the time of investment and a final valuation either at the date of exit, in case it was exited, and a present time valuation of the rest of the companies.

The valuation of each invested company will be based on the available financial data, such as acquisition prices, financing rounds metrics, companies successfully exited and startups that are no longer in business. The paper will also consider the stake and the exit price of each portfolio company, if applicable, it will then sum up the valuations of all the portfolio companies and divide it by the total capital invested by the VC firm to obtain the TVPI. The paper will compare the TVPIs of different VC firms to evaluate their relative performance and identify the factors that influence their value creation.

Now that the mechanics of how the paper intends to find each piece of information are explained, the next paragraphs will dive deeper into the valuation process and performance index obtention for each firm.

The first step will be to obtain a data base of all the investments done by the sampled firms. We will focus on financing rounds that are entirely considered Venture Capital rounds, so from Seed Phase to Series B. We will not consider Series C onwards, as in these rounds Private Equity firms start to jump into action. Since the study is about purely Venture Capital, these are the rounds selected to keep data consistent and coherent. Additionally, since these later rounds shelter less risk compared to earlier rounds, taking them into consideration might influence and contaminate the results. The metrics of each investment included in the data base will be the following ones:

- Year: will be needed to make readings with a comparable time metric between firms. This will help the study to treat and analyze firms depending on their maturity and experience.

- **Financing Round:** this metric will be one of the foundations of the valuation model this study will use a base value of each company invested at the time of the investment. It represents the size of the capital raised and the risk that different firms expose themselves to. The amount of risk that a company is willing to tolerate usually comes at a price, this is why in earlier rounds, higher stakes of startups are acquired, while in later rounds a lower percentage of the company is purchased. For this model we will use the following average values of acquisition for the rounds concerning the study: Seed round (30%), Series A (25%) and Series B (20%)<sup>12</sup>. A graphical depiction of these values is displayed in figure 2. (Data

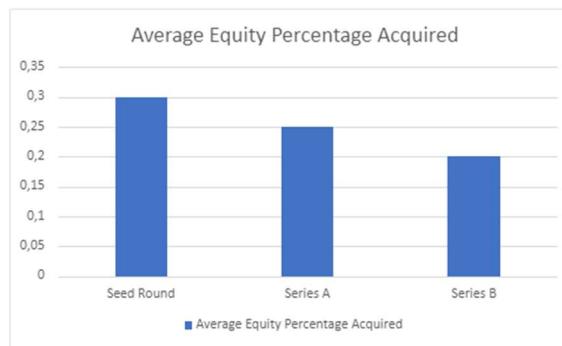


Figure 4. Average equity percentage acquired per financing round.

obtained from CrunchBase and PitchBook).

- **Capital Raised:** this metric will be the other pillar of the valuation model. The capital raised represents the price every firm that jumped into the investment paid to acquire the proportional section of the company that the financing round usually dictates. (Data obtained from CrunchBase).

With the use of these metrics, an initial valuation of every startup invested is provided. The calculation is the following one. Using the average equity acquired in each financing round, and multiplying the inverse figure to the capital raised, we can obtain a simple valuation. The thought process behind this method is, knowing for how much a percentage of a company is acquired, we can calculate the total value of the company in that moment using the inverse figure to obtain a proportional total value. This initial valuation allows the exercise to set a beginning point to compare later with a second valuation of those startups.

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<sup>12</sup> See [Equity Percentages to Offer Investors at Different Rounds \[Video\] | Equidam](#) visited in September 2023

Following steps include developing a new set of assumptions to continue building the model towards a fair representation of reality and obtain a second valuation which will be the ending point of the performance analysis. Due to the lack of public economic data on valuation of startups, Venture Capital firms' performance indexes, and similar crucial data missing, the study will use the VC business model as a base assumption for the next step.

Startups are inherently risky investments, and receiving VC funding doesn't guarantee a startup's success. Therefore, it's challenging to predict which startups will eventually achieve unicorn<sup>13</sup> status because the returns from these investments often take 5 to 7 years to materialize.

What is well-understood, though, is that due to the high-risk nature of startup investments, success in a portfolio is not evenly distributed. Most portfolio companies typically yield modest returns, while only a handful experience exceptional success, generating returns exceeding 10 times the initial investment. This phenomenon is commonly known as the "power law" in investment. Illustrated by the graph below from Andreesen Horowitz, it reveals that a mere 6% of VC deals contribute to 60% of the overall returns, whereas 50% of deals contribute to a modest 3–4% of returns.

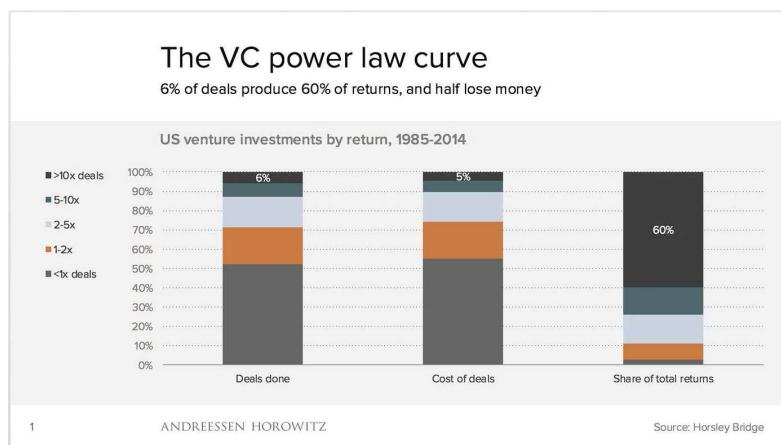


Figure 5. The VC power law curve (Horowitz, 2018)

This power law will be the first pillar of the second valuation exercise, but to get the most out of public information, we will introduce a second pillar that will help get our model as close to reality as possible. This will be to obtain information on which startups were

<sup>13</sup> See [Unicorn: What It Means in Investing, With Examples \(investopedia.com\)](https://www.investopedia.com/terms/u/unicorn.asp) visited in September 2023.

successfully exited, which ones ended out of business and which ones the firms are still holding as investments.

The reason as to why this information is beneficial to the study is because if a single progression is applied to the whole sample, the results will follow that same pattern, making this exercise a waste of time. It needs to have an additional variable that allocates higher return rates to those companies who are known to be sold, lower spreads to those still being held in a portfolio and allocated losses for those companies who never made it past the Death Valley.

This view of VC, as Figure 4 states, shows that about 6% of investments produce 60% of returns, meaning that the whole objective of a firm is not to gain on all their investments, matter of a fact, half of those investments lose money. The way the balance inclines towards the positive side is by having just a few investments that really multiply the investment, offsetting all the others.

These were all the variables taken into consideration, and the analytics broken down into the different parts of the research, and the methodology in order to achieve the results that this dissertation was looking for.

## 4. Results

### 4.1. ESG Focus Grading Results

Following the basis explained in the methodology section of this paper, the first analysis carried out was that of grading each firm depending on the weight they placed in being ESG friendly. This score was necessary for the analysis due to the lack of consistency or existence in this sort of information for VC firms in Spain.

The highest score in each of the tranches was given to those firms who accomplished every aspect mentioned during the description of the grading system. None of the points were given if the firm had not made any progress in those aspects. Half of the score was given to those firms who had an ambiguous situation in any of the tranches.

Table 1 illustrates the set of gradable characteristics of a firm as mentioned in previous paragraphs and the numerical score of each tranche. The first row includes each gradable section, the second row states the maximum score they can obtain in that section and the rest of the table depicts the score of each firm in each section.

The aggregation of these assessments, encompassing portfolio composition, team orientation, investment policy, and ESG reporting, culminates in an ESG score on a scale from 1 to 10 for each Spanish VC firm, which you can find in the last column of the table. This approach provides a comprehensive understanding of the multifaceted nature of ESG commitment and will serve as a foundation for analysis in our study to find the nexus between ESG focus and financial performance within the Spanish VC ecosystem.

| Descriptor | Regulatory Practices | Internal ESG Practices | External ESG Practices | ESG Reporting |             |
|------------|----------------------|------------------------|------------------------|---------------|-------------|
| ESG Focus  | 1                    | 3                      | 3                      | 3             | Total score |
| Firm 1     | 1                    | 3                      | 3                      | 3             | 10          |
| Firm 2     | 1                    | 3                      | 3                      | 3             | 10          |
| Firm 3     | 1                    | 3                      | 1,5                    | 0             | 5,5         |
| Firm 4     | 1                    | 3                      | 3                      | 3             | 10          |
| Firm 5     | 1                    | 3                      | 3                      | 0             | 7           |
| Firm 6     | 1                    | 3                      | 3                      | 0             | 7           |
| Firm 7     | 1                    | 0                      | 0                      | 0             | 1           |
| Firm 8     | 1                    | 3                      | 3                      | 0             | 7           |
| Firm 9     | 1                    | 0                      | 0                      | 0             | 1           |
| Firm 10    | 1                    | 0                      | 0                      | 0             | 1           |
| Firm 11    | 1                    | 0                      | 0                      | 0             | 1           |
| Firm 12    | 1                    | 0                      | 0                      | 0             | 1           |
| Firm 13    | 1                    | 3                      | 3                      | 0             | 7           |

Table 1. Spanish VC firm's ESG score (self-produced)

The results of this first study show that there is a noticeably strong effort being made by the Spanish VC ecosystem towards building a sustainable industry as 61.5% of the firms studied have obtain a higher grade than 5/10. Though the average score of the sample has been of a 5.27, the median is a 7, meaning that the firms that do act decide on not stopping on the basic steps, but rather try to incorporate ESG policies in every part of the firm.

There have been 3 outstanding firms that have not only incorporated these policies in their day-to-day business, but also have taken the time and effort to produce ESG reports,

helping the sector to improve its accountability and transparency through the public, and setting a standard for the rest of the firms in the ecosystem.

The average score of the firms who obtained a minimum score of 5/10 amounts to a 7,94. The reading of such a high score passed certain points means that the firms who decided to act towards being environmentally sound, really strive to involve ESG considerations in all their business segments. Most of these firms have obtained these higher scores not only because of their commitment to the responsible movement, but because they have been the pioneers in the industry. These higher rated firms have excelled in most scoreable tranches, being transparent about their investment policy, clear about future steps, included initiatives and certificates to showcase their efforts, building the first internal ESG reports or supporting industry-wide ones.

On the other hand, 38% of the sampled firms do not score higher than 1/10, which is a worrying figure. As the high median score and the first results analysis stated, as the top-rated firms overachieve in all the categories, the low-rated firms underperform in every aspect as well. This figure means that either these firms have not considered implementing ESG criteria in their scheme, they are too young to focus on other matters to the margin of their LPs, reputation and returns; or simply have failed to report in any level their ESG integration progress.

As a final note on the ESG analysis, the population appears to be very polarized. On one side we have a few firms that obtained the highest score, followed by another large bucket of firms that obtained very solid performances, and on the other side we have firms that underperformed in every aspect, with very few firms that lie between those two poles. Since this will be one of the primary aspects that will be looked at to build the set of conclusions, a mention of this aspect is vital.

Next piece of results will consist of a breakdown of the initial numerical metrics that were used to obtain the final performance analysis. It will serve as a beginning point for explaining the consequent tables and graphs.

| Firm # | Initial Portfolio Valuation | Final Portfolio Valuation | Number of Exits | TVPI |
|--------|-----------------------------|---------------------------|-----------------|------|
| Firm 1 | 1.172.200.000,00            | 1.269.700.000,00          | 15              | 1,08 |
| Firm 2 | 623.165.000,00              | 1.158.600.000,00          | 25              | 1,86 |

|         |                |                  |    |      |
|---------|----------------|------------------|----|------|
| Firm 3  | 738.250.000,00 | 2.133.700.000,00 | 36 | 2,89 |
| Firm 4  | 347.065.000,00 | 378.320.000,00   | 7  | 1,09 |
| Firm 5  | 282.860.000,00 | 682.980.000,00   | 16 | 2,41 |
| Firm 6  | 114.540.000,00 | 324.405.000,00   | 12 | 2,83 |
| Firm 7  | 12.533.900,00  | 15.454.500,00    | 0  | 1,23 |
| Firm 8  | 406.905.800,00 | 732.696.600,00   | 20 | 1,80 |
| Firm 9  | 210.075.400,00 | 170.176.200,00   | 4  | 0,81 |
| Firm 10 | 126.975.000,00 | 114.975.000,00   | 1  | 0,91 |
| Firm 11 | 489.460.000,00 | 474.645.000,00   | 8  | 0,97 |
| Firm 12 | 47.247.000,00  | 56.805.000,00    | 1  | 1,20 |
| Firm 13 | 391.630.000,00 | 570.360.000,00   | 9  | 1,46 |

Table 2. General results (Self-produced)

In table 2, the reader can find the general results of the research, including the initial valuation of each firms' portfolio, the final valuation of itself, the number of exits each firm has had and finally a first glance at what the performance of each firm looks like. Comments on each of these metrics will be further discussed in following paragraphs, using the pertinent graphical support they need to provide deeper and more coherent readings.

The last reality-based metric that has not been shown yet appears in the table 3. Information on the number of investments in each round. This metric shows the amount of risk each firm is willing to expose themselves to, or what kind of portfolio distribution they are looking to have. As mentioned in different sections of the dissertation, the financing round where each startup raises capital usually dictates the amount of capital invested, the percentage of equity they are willing to sell and the management support they need. In addition, financing series also give information on the maturity and size of the startup. All these are important perspectives on what the following table displays. An analysis of itself will appear immediately after.

| Firm # | Seed Round | Series A | Series B | General |
|--------|------------|----------|----------|---------|
| Firm 1 | 17         | 37       | 16       | 70      |
| Firm 2 | 19         | 44       | 12       | 75      |

|              |            |            |           |            |  |
|--------------|------------|------------|-----------|------------|--|
| Firm 3       | 36         | 65         | 22        | 123        |  |
| Firm 4       | 35         | 25         | 5         | 65         |  |
| Firm 5       | 12         | 25         | 6         | 43         |  |
| Firm 6       | 12         | 15         | 2         | 29         |  |
| Firm 7       | 5          | 9          | 0         | 14         |  |
| Firm 8       | 60         | 75         | 4         | 139        |  |
| Firm 9       | 40         | 17         | 2         | 59         |  |
| Firm 10      | 4          | 9          | 1         | 14         |  |
| Firm 11      | 31         | 29         | 9         | 69         |  |
| Firm 12      | 21         | 3          | 0         | 24         |  |
| Firm 13      | 22         | 18         | 7         | 47         |  |
| <b>Total</b> | <b>314</b> | <b>371</b> | <b>86</b> | <b>771</b> |  |

*Table 3. Number of investments per financing round (Self-produced)*

The total sample of investments this dissertation has employed accumulates a total of 771, of which 314 were invested in Seed Round (40,72%), 371 in Series A (48,12%) and 86 in Series B (11,16%). The reason behind this distribution is due to the relevance certain financial institutions have in different financing rounds.

Earlier financing rounds like Seed Rounds are disputed between angel investors and early Venture Capital firms. Series A is perhaps the round where the target investment amounts are just too high for angel investors to cover, but too small for Private Equity or growth VC firms to operate in. Finally, Series B is the round where growth of the company starts to be the focus of it, and the idea development phase can be considered over, in this series PE firms are the ones who dominate the game.

These statements are supported by the data obtained from the sample. The series with more investments in the sample is Series A, which coincides with the statement on VC being the predominant investor in this sort of series. The second series with more investments considered in the sample is Seed Round, and lastly the Series B. The series where VC has more competition from the larger capital power that a PE firm has, is also the series where they become the dominant figure. These are the selected funding phases elected for this study, which are also the ones with higher VC presence out of every round.

With these basic notes on quantitative data obtained for the study, further explanations on the main questions of the dissertation will be developed. A comment on the economic performance of the firms will be the first one being showcased, continued by a comment on exited positions, and finally the main comment of the section on a scatter plot comparing ESG score and economic performance.

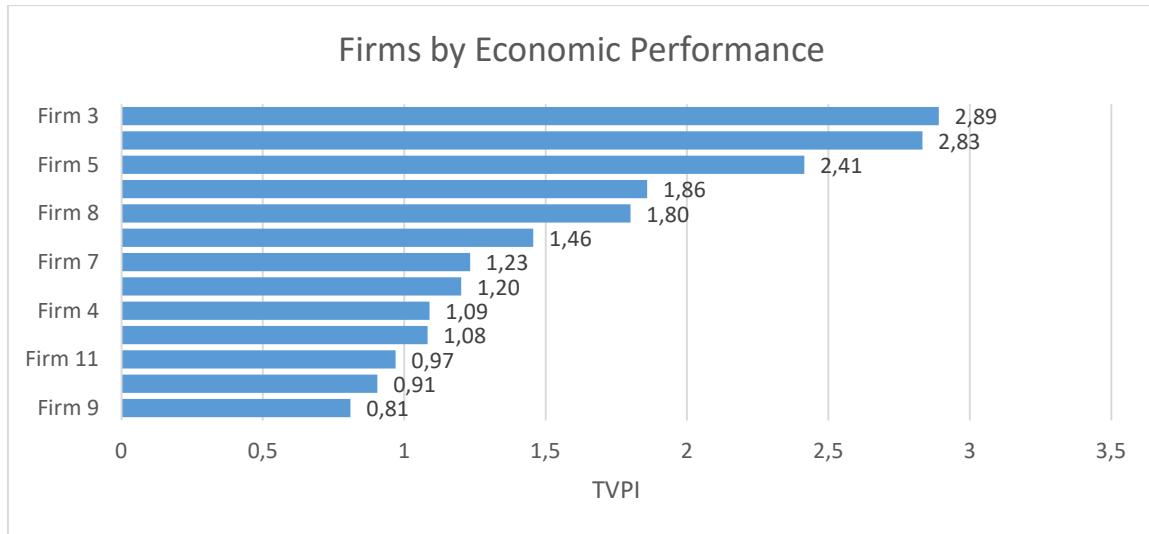


Figure 6. Firms ordered by economic performance (Self-produced)

Table 4 sorts the VC firms included in the sample from highest economic performance to lowest economic performance. The firm with the highest return was Firm #3 with a TVPI value of 2,89, meaning that per every €1 they invested, they were able to return €2,89; a very impressive sum considering the bucket of assets these firms invest in. The biggest underperformer was firm #9, with a TVPI of 0,81, meaning that for every €1 they invested, they lost €0,19, which is far from ideal considering a VC firm needs to payback their LPs. The average performance was 1,58, which is a very solid accomplishment for the industry since data used for this study involved investments from the creation of each firm. This metric's median is 1,23, which is lower than its average value, this is because there are more firms performing under the average value and a few of them overperforming at levels that upbring the average value.

Most firms, 10 of them (77%); have reached the break-even level, as a TVPI higher than 1 indicates. This performance spread forms a normal distribution, with most firms performing between TVPI values of 1 and 2, only 3 firms performing under TVPI 1 and 3 firms performing over TVPI 2. The reason behind the median score being closer to 1 is because the difference in the bottom part of the distribution is not as large as in the top part. This makes the three top firms seem outliers, while they are not. For these reasons, the statistical view of this distribution is that of a right skewed normal distribution<sup>14</sup>.

<sup>14</sup> See [Right-Skewed Distribution: What Does It Mean? \(prepscholar.com\)](https://prepscholar.com/right-skewed-distribution-mean) visited in September 2023

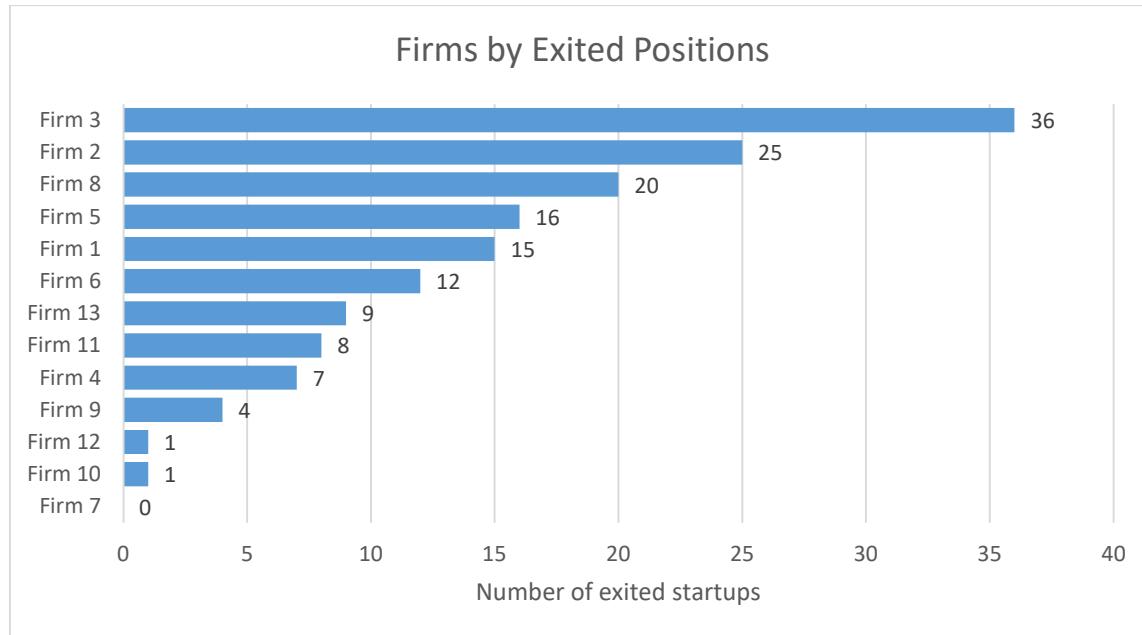


Figure 7. Firms ordered by number of exited companies

Table 6 shows the number of exits each firm has had in their lifetime. The firm with the highest number of exits has been again firm #3 with a total of 36 exits, and the firm with the lowest number of exits has been firm #7 with none. The average number of exits was 11,84 while the median number of exists was 10,42. This again, shows a very similar distribution as the one obtained with economic performance. Most firms lie between 5 and 20 exits, in the top side of the distribution we find two firms who are separated from the rest with a larger margin than the rest, depicting again a right skewed normal distribution.

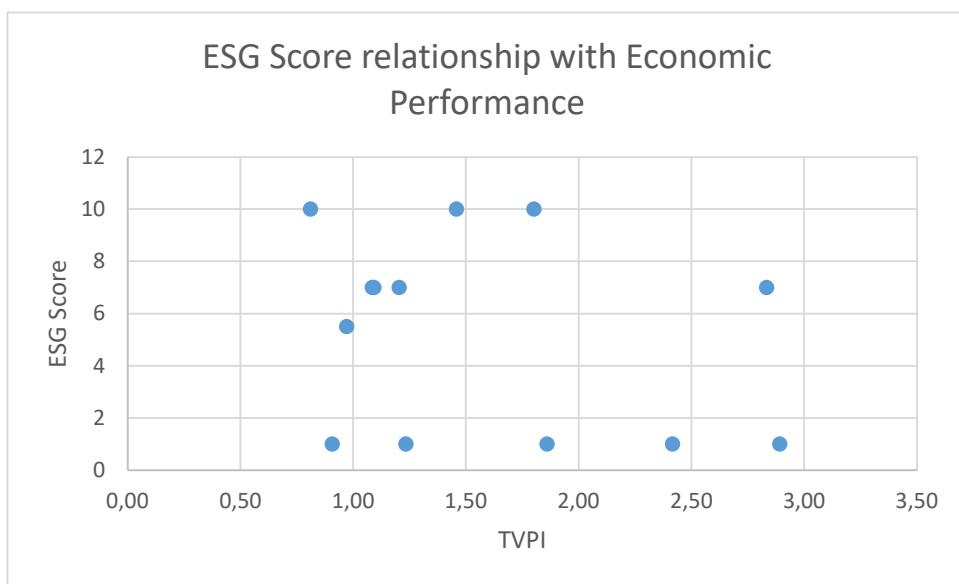


Figure 8. ESG Score in relation to economic performance

The last part of the results section is reserved for the main study, where the largest emphasis will be placed on. The next paragraphs will be dedicated to viewing and analyzing the following figure, which compares the ESG score of each firm to its economic performance.

Figure 7 shows a scatter plot where the ESG score obtained in the first part of the exercise is displayed in the Y-axis and the economic performance represented by the TVPI obtained in the second part of the exercise is displayed in the X-axis. At first glance, the scatter plot does not appear to show any direct relationships between the two variables, so a deeper dive into the values shown is required.

The average values of the ESG scores and TVPI are 5,27 and 1,58 respectively. Looking at what the average value of both variables would occupy in the plot, point (1,58;5,27); one could argue that since it is a rather centered position, both variables could be directly related. This read is only done through the aggregation of all values and comparing summarized values, so it is not very reliable and though it might possess some internal validity, under no condition provides external validity.

Perhaps the same reading but using the median values can provide a more adjusted version of itself, since we are working with noticeably polarized data populations. The median point is (7;1,23), which starts to unveil what the data hid. In this point it's observed that the ESG score is high compared to the average value, and the TVPI is low compared to its average value.

Observing the highest values obtained in the ESG study, there were 3 firms that obtained the maximum scores, and none of those firms can be found in the top 3 better performing firms, matter of a fact, only one of those 3 greener firms enters the top 5 performers. If the same reading is made but looking at the lowest ESG scores, three of the firms that obtained the worst score entered the top 5 best performing firms.

Following this line of thought of looking at the least ESG compliant firms, their performance values are completely spread out. There are firms who scored the lowest in ESG that entered the top 2 worse economic performers and firms with the same ESG score that entered the top 2 best economic performers. This second clue adds weight to the argument that ESG compliance might not be a metric that justifies returns.

As a final argument while reading the results, there is a cloud of values that lies above the 5-point ESG mark and below the 2 TVPI mark. This group of firms present the most consistent values amongst the sample, and it can be easily read that the highest ESG performers do not reach extraordinary returns.

This collection of results and comments will be the base to the conclusions, which will be displayed in the following section.

## 5. Conclusions

For the final analytical section of the dissertation, a set of conclusions were drawn from the representation of the results. As an initial note, the results were not as optimistic as wished in certain areas, and the sample chosen was a fair representation of the Spanish VC ecosystem, so the figures obtained through this study do have a degree of external validity. Having introduced this, the set of conclusions is the following one.

First conclusion, there is still a long way to go in the ESG department. While it is true that a few firms have advanced a lot this sense, there were more firms that had not destined any efforts towards being ESG friendly than firms that outperformed every categories' requirements. The green movement must be a collective effort, and though having a few firms that do care is a solid start to this mission, every firm in the ecosystem should have a certain minimum focus on meeting ESG criteria.

The positive side about having a smaller number of elite ESG representatives in the industry, is that they are also some of the biggest players in the game by number of investments and by exited positions. This turns them into advocates of how a solid investment policy mixed with a responsible ESG policy can become the key to financial success while also having a good impact on society and encouraging innovative businesses become a part of the whole economic structure.

ESG is slowly but surely becoming an important metric for companies to have for a few key reasons like, societal accountability, environmental impact or reputational value. As mentioned throughout this dissertation, the western view of a good company is starting to consider more responsible models to base their operations in. In addition to regulatory compliance, which is already vital for any business to survive; social pressures to become greener are more intensive for public sectors, and bearing in mind this industry is fully private, the fact that there are firms doing this with the goal of becoming the strongest in the economy in these aspects, puts a good word in for them.

Second conclusion, and perhaps the main one; there is no relationship between ESG compliance and economic performance. As painful to write as it is to read. Data showed no correlation between the two variables. Though a few firms did follow the trend of what would have been the positive relation line, and the aggregated average values of both variables appeared to be in that same positive line, the individual values obtained in this study are too spreader to build a relationship between the variables.

One might even argue that there exists a light negative correlation, which is not out of hand to mention. The top 5 best performing firms include three of the worse ESG performing firms and only one of the best ESG performing firms, meaning that by doing business the traditional way, there is a higher chance of getting extraordinary returns compared to the ESG model. To add more weight to this side-argument, the worse economic performer was a firm that obtained the highest ESG score.

In any case, ESG does not appear to be any direct or reliant indicator of economic performance, and it is still an activity that firms need to do to be compliant with legal requirements, meet consumer expectations and improve brand recognition and image. And there is still a long way until responsible investments catch up and overperform.

## 6. Limitations

One of the foremost challenges in conducting a comprehensive analysis of VC firms' performance is the limited availability of economic data. VC firms and the startups they invest in often operate within the private sector, which means they are not subject to the same disclosure requirements as publicly traded companies.

As a result, financial and operational data for these entities can be insufficient, non-standardized, or confidential. This limitation poses a considerable challenge when attempting to gather a representative sample of VC firms and their corresponding investments. The lack of economic information, including revenue figures, profitability metrics, and detailed financial statements, may restrict the depth of the performance analysis.

Even when data is accessible, issues related to its quality and consistency may arise. Private firms may not report ESG-related information consistently or comprehensively, making it difficult to establish standardized metrics for ESG compliance. Variations in data availability and quality across VC firms and their investments can introduce measurement bias and limit the ability to draw robust conclusions.

The integration of ESG principles within the VC landscape is a relatively recent development. While ESG considerations have gained prominence in other areas of finance, their application to VC investments is still evolving. As a result, the existing literature on the relationship between ESG compliance and VC performance may be limited in scope and depth. This may impact the availability of well-established theories and models for analysis.

Establishing a direct causal link between ESG compliance and VC performance can be challenging. While correlations may emerge, determining whether ESG practices are the primary drivers of performance outcomes or whether other factors are at play requires careful consideration. Confounding variables, industry-specific dynamics, and external economic factors can complicate efforts to isolate the impact of ESG compliance.

**Sample Selection Bias** Selecting a representative sample of VC firms and startups for analysis is essential for drawing meaningful conclusions. However, there may be inherent biases in the sample selection process. VC firms that voluntarily report ESG-related data may differ from those that do not, potentially introducing selection bias.

Additionally, the willingness of startups to engage in ESG practices can vary widely, affecting the composition of the sample. Considering these limitations, it is essential to approach the study with a degree of caution and recognize that the findings may provide valuable insights but not definitive conclusions. Mitigating these limitations may involve employing robust data collection methods, acknowledging potential biases, and conducting sensitivity analyses to assess the robustness of results. Additionally, this study contributes to the ongoing dialogue in the emerging field of ESG in VC, emphasizing the need for further research and exploration to address these challenges comprehensively.

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