Hacettepe University Graduate School of Social Sciences

Business Administration Department

Accounting and Finance Programme

THE EXAMINATION OF THE RELATIONSHIP BETWEEN INTEGRATED REPORTING AND COST OF CAPITAL: EVIDENCE FROM BORSA ISTANBUL

Lamija RIZVIC

Master Thesis

Ankara, 2022

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ACCEPTANCE AND APPROVAL

The jury finds that Lamija Rizvic has on the date of 03.06.2022 successfully passed the defense examination and approves her master's thesis titled "The Examination of the Relationship Between Integrated Reporting and Cost of Capital: Evidence From Borsa Istanbul".

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Lamija RIZVIC

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ETİK BEYAN

Bu çalışmadaki bütün bilgi ve belgeleri akademik kurallar çerçevesinde elde ettiğimi, görsel, işitsel ve yazılı tüm bilgi ve sonuçları bilimsel ahlak kurallarına uygun olarak sunduğumu, kullandığım verilerde herhangi bir tahrifat yapmadığımı, yararlandığım kaynaklara bilimsel normlara uygun olarak atıfta bulunduğumu, tezimin kaynak gösterilen durumlar dışında özgün olduğunu, **Doç. Dr. Burak PİRGAİP** danışmanlığında tarafımdan üretildiğini ve Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Tez Yazım Yönergesine göre yazıldığını beyan ederim.

[*İmza*]

Lamija RIZVIC

ACKNOWLEDGEMENTS

First of all, I would like to thank my thesis advisor Doc. Dr. Burak Pirgaip, whose office doors were always open when I encountered a problem or had a question about my research or writing. He always allowed me to consider this work as my own, but he also always steered me in the right direction when he felt I needed it.

I must express my heartfelt gratitude to my parents Refija and Sejad, family, and friends for their unwavering support and encouragement throughout my studies and during the process of researching and writing this thesis. This achievement would not have been possible without them.

I want to thank to my sister Mirela and my beloved niece Layla for the motivation that they gave me during the writing process as well as my friends: Ceren who gave her support for the technical and linguistic part of the thesis as well as moral support, Nihan who gave recommendations regarding the process by sharing her previous experience and Dinara Jose, Itana, Eduardo, Fathi, Hanife and Sila who were my biggest moral support during the hard days.

DEDICATION

Mojoj majcici Refiji, mojoj najvećoj podršci.

Hvala ti za sve, volim te.

ABSTRACT

RIZVIC, Lamija. The examination of the relationship between integrated reporting and cost of capital: evidence from Borsa Istanbul**,** Master's Degree, Ankara, 2022.

Following the establishment of the International Integrated Reporting Council and with the introduction of the Integrated Reporting Framework, the debate on the implications of Integrated Reporting (IR) has begun. Unlike the familiar financial statements based on financial information that companies are required to publish, IR (currently published on a voluntary basis) includes non-financial information that is intended to help improve corporate performance.

This study aims to investigate the impact of IR on the cost of funding. Specifically, we look into the impact that IR leaves on weighted average cost of capital (WACC), cost of equity (COE) and cost of debt (COD). Impact of the IR will be measured separately and in combination with the Environmental, Social, and Governance (ESG) scores of the sample companies. We also examine the possible moderating role of IR on the relationship between ESG scores and cost of funding. Research data is secondary, and it comprises data from 2015 to 2020 for a total number of 59 companies which are listed on Borsa Istanbul. To test our hypothesis, we employ panel data analysis.

Our results indicate that WACC is positively associated with ESG scores and IR, while neither ESG nor IR has a significant impact on COE. When COD is considered, we find that high ESG scores translate into low cost of debt. We conclude that ESG and IR practices are not perceived positively by investors in an emerging market yet. Particularly in the capital markets, they appear to be unaware and/or reluctant in attaching importance on such contemporary practices. However, the moderating impact of IR on the relationship between ESG and WACC shows that WACC can be reduced when companies also use IR to better communicate their value creating activities. A similar impact is observed for COD as we find that IR preparing social-sensitive companies may take the advantage of reduced costs in the debt market. Apart from the moderating role of IR, we provide evidence that IR has a potential in reducing the cost of funding among "sustainable" companies.

Keywords

Integrated Report, ESG, Cost of capital, Borsa Istanbul

ÖZET

RIZVIC, Lamija. Entegre Raporlama ve Sermaye Maliyeti Arasindaki İlişkinin İncelenmesi: Borsa İstanbul (BİST) Örneği**,** Yüksek Lisans Tezi**,** Ankara, 2022.

Uluslararası Entegre Raporlama Konseyi'nin kurulması ve Entegre Raporlama Çerçevesi'nin tanıtılmasıyla Entegre Raporlama'nın (IR) etkileri üzerine tartışmalar başlamıştır. Şirketler tarafından yayımlaması gereken finansal bilgilere dayalı tabloların aksine, IR (mevcut durumda gönüllülük esasına göre yayınlammaktadır), kurumsal performansı iyileştirmeye yardımcı olması amaçlanan finansal olmayan bilgileri de içerir.

Bu çalışma, IR'nin finansman maliyeti üzerindeki etkisini araştırmayı amaçlamaktadır. Özellikle, IR'nin ağırlıklı ortalama sermaye maliyeti (WACC), özsermaye maliyeti (COE) ve borcun maliyeti (COD) üzerindeki etkisi irdelenmektedir. IR'nin etkisi, ayrı ayrı ve örnek şirketlerin Çevresel, Sosyal ve Yönetişim (ESG) puanlarıyla birlikte ölçülmektedir. Ayrıca, ESG puanları ile finansman maliyeti arasındaki ilişki üzerinde IR'nin olası düzenleyici rolü de incelenmektedir. Araştırma verileri ikincil olup, Borsa İstanbul'da işlem gören toplam 59 şirketin 2015-2020 yılları arasındaki verilerini içermektedir. Hipotezlerin test edilmesi amacıyla panel veri analizi kullanılmaktadır.

Sonuçlar, WACC'nin ESG puanları ve IR ile pozitif olarak ilişkili olduğunu gösterirken, ne ESG ne de IR'nin COE üzerinde önemli bir etkisi vardır. COD dikkate alındığında, yüksek ESG puanlarının düşük borç maliyeti anlamına geldiği sonucuna ulaşılmıştır. ESG ve IR uygulamalarının henüz gelişmekte olan bir piyasada yatırımcılar tarafından olumlu algılanmadığı değerlendirilmiştir. Özellikle sermaye piyasalarında yatırımcılar konula ilgili farkındalıkları olmadığından ve/veya isteksiz davrandıklarından bu tür çağdaş uygulamalara önem atfetmemektedir. Bununla birlikte, IR'nin ESG ve WACC arasındaki ilişki üzerindeki düzenleyici etkisi, şirketlerin değer yaratan faaliyetlerini daha iyi iletmek için IR kullandıklarında WACC'nin azaltılabileceğini göstermektedir. Benzer bir etki COD için de gözlemlenmiştir, çünkü IR hazırlayan sosyal performansı yüksek şirketlerin borç piyasasındaki düşük maliyetlerden yararlanabileceği tespit edilmiştir. IR'nin düzenleyici rolü dışında, IR'nin "sürdürülebilir" şirketler arasında finansman maliyetini azaltma potansiyeline sahip olduğuna dair kanıt da sunulmaktadır.

Anahtar Kelimeler

Entegre Raporlama, ESG, Sermaye maliyati, Borsa İstanbul

TABLE OF CONTENTS

ABBREVIATIONS

AR – Annual Report

CDSB – Climate Disclosure Standards Board

COD – Cost of Debt

COE – Cost of Equity

CSR – Corporate Social Responsibility

ERTA – Integrated Reporting Network Turkey

ESG – Environmental, social and governance

FASB – Financial Accounting Standards Board

GRI- Global Reporting Initiative

IAG – Investor Advisory Group

IASB – International Accounting Standards Board

IIRC – International Integrated Reporting Council

IR – Integrated Report

ISSB – International Sustainability Standards Board

KPI – Key Performance Indicators

OSHA – Occupational Safety and Health Administration

PRI – Principles for Responsible Investments

SASB – Sustainability Accounting Standards Board

SKD – Sustainable Development Society Turkey

SR – Sustainability Report

TBL – Triple Bottom Line

TKYD – Corporate Governance Association of Turkey

TRWG – Technical Readiness Working Group

TUSIAD – Turkish Industrial and Business Administration

VRF – Value Reporting Foundation

WACC – Weighted Average Cost of Capital

WHO – World Health Organization

LIST OF TABLES

LIST OF FIGURES

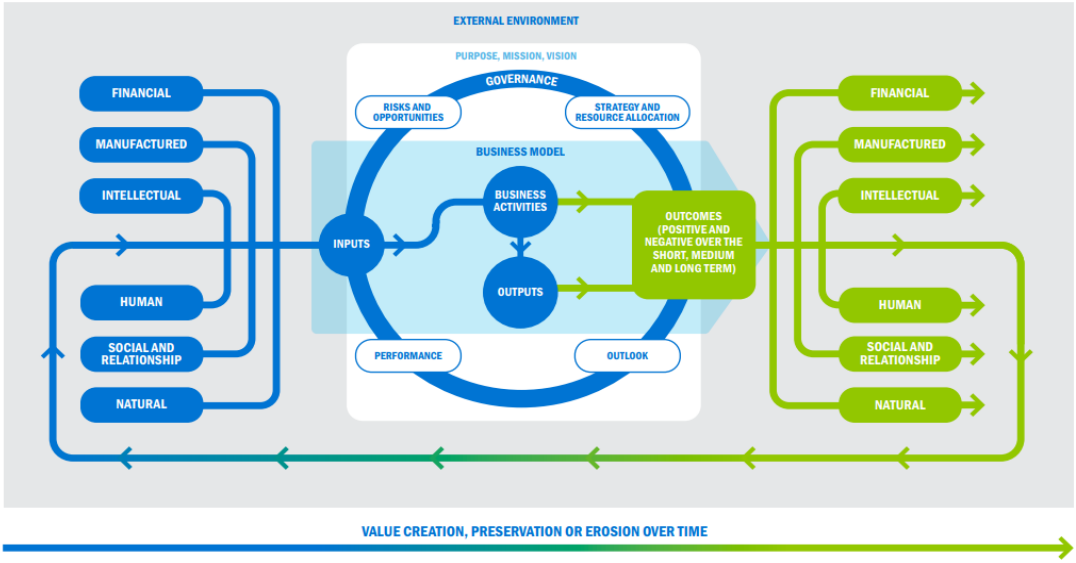
INTRODUCTION

Over the last few years due to constant climate changes and disruptions in environment caused by different human activities society and different kind of organizations and associations increased their interest into company business. This interest is mainly oriented towards non-financial informations about the company such as their policies on environment, society and way of the corporate governance. Moreover, society started to raise questions such as “To whom business are reporting?”, “Who can held them accountable for their doings?” and “How their value creation can be measured?”. As a result of this interest disclosure of non-financial information became critical for maintaining a good position in the marketplace for a company. Year by year, more companies are moving to disclose non-financial information to improve their market position. There is a belief that corporate disclosure of sustainability, environmental and social information positively influences trust between companies, their stakeholders and shareholders. For this and similar reasons, companies have innovated their reporting system by disclosing the aforementioned information. In the past, these innovations consisted of publishing another separate report, usually called a "sustainability or environmental report," in addition to the standard financial reports and statements, to disclose non-financial information. These reports were focused on disclosure of non-financial information regarding the environment, society and governance of the company. Usually these reports were constructed in regards to the Sustainability Reporting Guidelines published in 1999 as part of The Global Reporting Initiative (GRI). All these separate reports did not provide comprehensive information on risks and uncertanities (Hoque, 2017). This being the case, need for one report which will comprehend all different kinds of financial and nonfinancial information became crucial for development.

In 2010, the International Integrated Reporting Council (IIRC) was established. Along with the establishment of the IIRC, the Integrated Reporting Framework was published in 2013 (updated version published in 2021), and since then, the topic of Integrated Reporting (IR) worldwide has been debated.

The main goal of IR is to promote integrated thinking, improving the quality of information to create value over time. Integrated thinking is the thinking and linking of different factors that affect the ability of companies to create value. These factors are the capital employed, the capacity of the organization, and the organization's ability to respond to stakeholder interests (IIRC). We can say that IR presents a process which will transmit company value creation to the public. As mentioned by (Busco C., 2013) main objective of an IR is to increase accountability in regard to utilization of capital (financial, manufactured, intellectual, human, social and relationship and natural). IR Framework includes content elements and guiding principles which companies can look up to when preparing an IR. Content elements include: organizational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance and outlook, while, guiding principles include: strategic focus and future orientation, information connectivity, stakeholder relationships, materiality, conciseness, reliability and completeness, and consistency and comparability.Important information regarding the IR framework is that it does not recommend specific key performance indicators (KPIs) that a company should use or, at least at this time, does not have a mandatory form. According to (Kaplan Group, 2020), the individual capital KPIs can be defined and it can be shown how the individual KPIs are interconnected and influence each other.

Figure 1: Process through which value is created, preserved, or eroded



Source: (Integrated Reporting Foundation, n.d.)

From Figure 1, published in IR Framework, we can understand the main role of an IR. This role is reflected in the business model of the company, which is the center of the figure and includes inputs, business activities, outputs and outcomes, while at the same time the inputs and outcomes parts are related to governance. In addition, the business model and governance together are part of the Purpose, Mission, and Vision section, which connects everything to the external environment. Based on the inputs, which are composed of six different types of capital that can be seen in Figure 1, we can see that these inputs are associated with risks, opportunities, and performance when the business starts, which means that managing these variables will have a direct impact on the outputs and outcomes of the company. When we look at outcomes, which can be positive or negative in the short, medium and long term, we see that this part is closely linked to the company's strategy, resource allocation and future prospects. We see that everything is interconnected and influences each other. Therefore, it is important to summarize and disclose all sections so that the public and shareholders can understand the company's short, medium, and long-term value creation. In addition to value creation, readers of the reports can also understand the impact the company has on the external environment due to its business model.

The importance of IR is still being researched, and many scholars are approaching the topic from different angles to understand whether the cost of publishing IR is less or greater than its benefits. Although, as stated earlier, IR represents something new, IR was supported by the B20 in 2014 as a tool that will improve corporate reporting in the future (B20, The Panel, 2014).

Today, appliance of IR around the world is on the voluntarily basis. On the other side, IR in South Africa started in 2011 when King III which requires use of IR on “explain or apply” basis was published. Worldwide main supporters of an IR idea are: Australia, New Zealand, Japan, India, Singapore, European Union, Brazil and UK and first companies which started to publish an IR or report that has the most similarities with an IR even before IR era started are: Novozymes from Denmark, Natura from Brazil, Dutch company Phillips and United Technologies Corporation from USA which will be explained more in detail in the second chapter. Speaking about IR in Turkey, first IR was published in 2015 by Arguden Governance Academy and until now besides them

most published IR within the boarders of Turkey are by Turkish Development and Investment Bank, Cimsa and Garanti BVB. Established in 2020, Integrated Reporting Network Turkiye (ERTA) is responsible for raising awareness of IR among the companies in Turkey and work on supporting the companies to publish IR.

Considering all said and importance of the topic we conduct a research using sample of the companies from the Borsa Istanbul in Turkey employing unbalanced panel data regression with fixed effects. This study focuses on the impact that IR on cost of the capital from three different perspectives. First, we take into account WACC, second we focus on investigating relationship in regard to COE and third we will be dealing with COD. On the contrary to the most of the previously conducted researches not only in Turkey but also worldwide, this study will include ESG scores as a independent variable as well and moreover, through the interaction of ESG with IR, we investigate the moderating role which IR has on the relationship between cost of capital and ESG scores.

We discuss relevant studies in the literature review. In a nutshell, (Wong, et al., 2020) on sample of Malaysian companies examine the impact that ESG scores leaves on the cost of capital. They found that companies which are presenting their ESG scores can benefit from 1.2% reduced cost of capital. Similar to this study but combined with IR (Albitar , Hussainey, Kolade, & Gerged, 2019) found that companies presenting their IR are having better financial performance. Moreover, their results suggest that IR has moderating role on relationship between financial performance and ESG scores. Relationship between cost of capial and IR was investigated in few researches from which we will highlight studies done by (Garcia-Sanchez, 2017) and (Vena, 2020). We highlighttheir studies due to the sample prevalence 27 and 31 different countries, respectively. Both of the studies found negative relationship between cost of capital and IR, and he latter study reported that companies which are producing and IR can benefit from 1.4% decrease in cost of capital. (Gerwaski, 2020) and (Muttakin, 2020) both, in their studies observed relationship between the IR and cost of debt. While the former study used sample of European companies and had focus on public debt, the latter investigated companies listed on the Johannesburg Stock Exchange (JSE). Even though

their samples are having territorial differences results suggest that companies which are publishing IR can benefit from lower cost of debt.

Overall, this study seeks to give responses to following research questions:

- Is publishing an IR beneficial for the companies in the terms of reduced cost of capital?
- Is the benefit same in terms of WACC, COE, COD?
- Is there benefit of ESG scores for the companies?
- If there is benefit of ESG scores to what extent it is?
- Is there benefit of combining ESG scores with an IR?
- If there is benefit to what extent it is?

Under this backdrop, Chapter 1 discusses the conceptual and institutional background of integrated reporting. In Chapter 2, we provide a brief historical overview regarding how integrated reporting has become a common practice in several jurisdictions. Chapter 3 offers an outlook for Turkish experience in integrated reporting. After describing its evolution in Turkey, we empirically analyze the impact of integrated reporting on cost of capital of Turkish listed companies in Chapter 4. We conclude the thesis with the Conclusion section

CHAPTER 1. CONCEPTUAL AND INSTITUTIONAL BACKGROUND OF INTEGRATED REPORTING

1.1. CONCEPTUAL BACKGROUND

1.1.1. THE CHANGE IN THE WAY OF REPORTING: FINANCIAL TO SUSTAINABLE REPORTING

To understand and comprehend information about a company or business, we have prominently provided with the information that company discloses. This information is presented in some particular form or explanation. Depending on the size, industry and location of the company, the statements can vary, but in most cases stakeholders including investors, suppliers or employees are interested in the financial statements such as the balance sheet, income statement, and/or cash flow statement. All these statements consider and present only financial information of the company and are referred to as the general purpose financial statements. According to the International Financial Reporting Standards Foundation (2003), the purpose of these financial statements is to present various and relevant financial information that allows interested parties to make various economic decisions based on them. Although these financial statements are used worldwide, they have limitations that were noted as early as the 1990s by Holland (1998) who pointed out that information provided in financial statements is cumbersome and extensive for users. Besides the volume of information, the only focus of these reports is on finances.

As the 21st century changes and every area is thoroughly researched, and people have developed better understanding and sense of responsibility for the environment and society, the focus on financial information is changing either. This change does not mean that the purpose of company is not still to maximize shareholder wealth. It just means that in addition to the primary purpose, there is also a need to do so in a way that does not harm society and environment. Pressure from the society has led business to

focus more on sustainability which implies that goods and services should be repairable, recyclable and biodegradable, that there should be as little waste as possible in the production process and that resources should be used wisely (Taticchi, 2013).

The concept of sustainability describes phenomenon in which future should not be at the expense of the past and present and has its own three main pillars: environmental, social, and economic (ESG, The Report, 2022). In the literature the concept of sustainability is often associated with "Triple Bottom Line" (TBL), a term that describes the expansion of the environmental agenda to include the economic, social, and environmental pillars. As mentioned by Elkington (1997), TBL can be defined in terms of people, profit, and planet. Environmental, Social and Governance (ESG) provides framework that explains and measures sustainability (ESG, The Report, 2022). Of the three pillars mentioned, "E" stands for environment referring to the company's energy consumption, waste management, water and air pollution, and raw material sourcing; "S" stands for society with the company's behaviour toward its own employees, partners, customers, and society in general being the most important, and "G" stands for governance with financial transparency being the key segment (Corporate Finance Institute, 2022).

In the spirit of sustainability companies have begun to publish sustainability reports which contain information about the company's activities of firm and its public image in relation to the environment, society, and governance. The publication of sustainability reports, as opposed to financial reports is voluntary and companies can refer to Sustainability Reporting Guidelines published in 1999 as part of The Global Reporting Initiative (GRI), when preparing sustainability reports (Busco, 2013). The GRI presents guidelines to help companies measure ESG and these guidelines are divided into three main categories: "Sustainability Reporting Guidelines", "The Supplement Guidelines" and "The GRI Guidelines for Report Users" (ESG, The Report, 2022). The main purpose of the GRI standards is to increase comparability of reports, improve corporate accountability and provide stakeholders with more information about a company's sustainable performance. Using the GRI standards which are published on the Global Reporting website, companies can create their own

sustainability report that includes all of the above pillars related to the environment, society and governance.

In this way, companies have started to prepare their annual reports (AR) containing both financial information and sustainability reports that include non-financial information.

1.1.2. THE CHANGE IN THE WAY OF REPORTING: INTEGRATED REPORTING

Since annual reports have become a combination of two sorts of information separately, a discussion has begun about creating a single report that presents them in an integrated manner. All this led to the introduction of an Integrated Report (IR). In the words of Busco (2013), IR provides the opportunity to combine profitability and sustainability by presenting financial and non-financial information in a single story. In addition, IR enhances investors' understanding of ESG materiality and provides a link to corporate performance.

Before providing any further explanation, it is important to explain and understand the difference between AR, SR, and IR.

Table 1: Main features of Annual, Sustainability and Integrated Reports

	Annual reports	Sustainability reports	Integrated reports
Target	Specific stakeholders (shareholders and investors)	Several stakeholders (social and environmental perspective)	Primarily providers of financial capital
Mandatory/ voluntary	Mandatory	Voluntary (with some exceptions: Denmark, Sweden, France)	Voluntary (with some exceptions: South Africa)
Regulation or guidelines	National and international laws and GAAP (or IAS/IFRS)	Global reporting initiative (GRI)	IIRC framework
Comparability	High	Medium	Low
Industry customization	Low	Medium (Sector supplements)	High
Assurance level	High	Low	Low
Scope	Financial reporting entity (company or group of companies)	Broader than financial reporting entity (supply chain, LCA approach)	Broader than financial reporting entity (supply chain, LCA approach)

Source: (Busco, 2013, p. 50)

As pointed out by Busco (2013, p. 52), IR can be seen as a tool to overcome the limitations of AR, which has a short-term orientation and disregards non-financial information and SR, which lacks connection with financial performance. Even though IR is intended to benefit all stakeholders according to IIRC (2021), investors and fund providers are the targeted stakeholder group of an IR. While the similarity of AR and IR lies in the main users of the report, the biggest difference between these two reports is the time frame, as AR is short-term oriented, while IR is focused on long-term value creation.

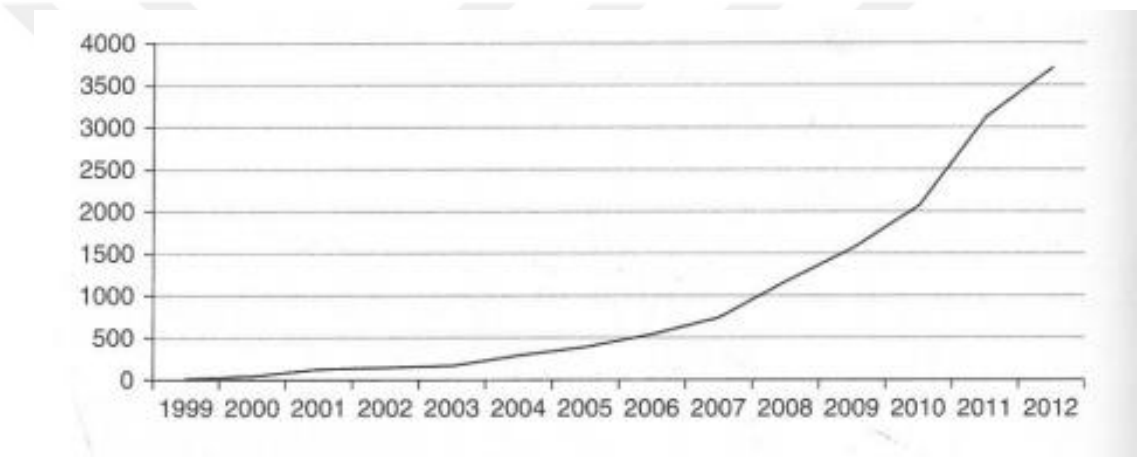
The fact that IR is long-term oriented raises the question: *What will short-term oriented investors think of it?* Some might argue that it is useless, and the publication of IR is completely unnecessary, because the long-term orientation is a potential threat to them, as they are willing to sacrifice a capital (e.g. people) in order to make short-term profits. On the other hand, from a long-term perspective, it is impossible to create value by maximizing only one capital. When considering the relationship between SR and IR, the first thing that stands out is that IR is principles-based, which in the context of capitals means that not all capitals are relevant and applicable to every organization, while SR, in line with the GRI, provides a fixed list of elements that must be disclosed. The second difference between IR and SR is that SR is based on the stakeholder concept, while IR is based on the capital concept (Busco, 2013, p. 54). As for the similarities, IR and SR also include non-financial information, which is the main difference with AR, which does not include non-financial information, but only a financial report.

1.1.3. THE PROS AND CONS OF INTEGRATED REPORTING

According to Marimar, Miranda Partners (2021), the advantage of ESG reports is that they are independent from financial data and investors who are only interested in financial information can read ESG reports more easily, while the advantage of IR is that financial and non-financial data are combined, so it is not necessary to read two separate reports because all the information is in one place.

On the other hand, IR has the disadvantage of being very long and potentially complicated to interpret and it has higher cost. The disadvantage of a standalone ESG report is that sometimes when investors read a company's financial report, they think it is just a report and do not read the ESG report at all. In addition, standalone ESG and sustainability reports fail to explain the necessary links between strategy, market, and performance opportunities, which consequently does not allow stakeholders to make an effective assessment of the company's position. It is believed that companies that have published a sustainability report over the years are likely to accept and start publishing one IR (Eccles, 2015, p. 62).

Figure 2: Number of GRI reports 1999-2012



Source: (Eccles R., 2015, p. 62)

Figure 2 above shows that the number of companies publishing a sustainability report in accordance with the GRI guidelines has increased rapidly over the years. From 1999, when only 11 companies had submitted a GRI report, the number has increased to over 3.500 published GRI reports in 2012. As mentioned by Eccles (2015, p. 63), the RobecoSAM organization studied how many IR were published in 2011 and 2012. Although these reports were not IR, they contained information about the use of environmental and social data with the aim of saving costs. They associated this type of data with the "connectivity of information" of IR and based on their research, only 8% of 2.000 large companies had published a similar report in 2011. This has changed and there was a 50% increase in 2012 where 12% of the same number of companies published a similar report.

1.2. INSTITUTIONAL SUPPORT FOR INTEGRATED REPORTING

The exact beginning of IR era is hard to define, as the discussion about creating a report that covers all concerns has been going on for a long time, but the widely accepted IR creation is associated with the establishment of the International Integrated Reporting Council in 2010 and the Sustainability Accounting Standards Board (SASB) in 2011 (Eccles, 2015). The main organizations responsible for the implementation and creation of IR are: Value Reporting Foundation (VRF), International Integrated Reporting Council (IIRC), Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), Financial Accounting Standards Board (FASB), International Accounting Standards Board (IASB), Climate Disclosure Standards Board (CDSB) and "The Big Four" accounting firms such as: PwC, Deloitte, KPMG and Ernst & Young (Eccles, 2015, p. 69).

Organizations such as VRF, GRI, SASB and CDSB are working on the development of non-financial information and its measurement and disclosure. FASB and IASB are promoting the adoption of IR and providing relevant training and advice to IR, while the Big Four are assisting companies wishing to publish a IR to work on the materiality of the information for audit purposes.

With the intention of creating a better understanding of the impact of companies on IR and its importance, we elaborate on its main objectives in the following subsections.

1.2.1. THE VALUE REPORTING FOUNDATION

It is important to start with the Value Reporting Foundation (VRF), which is a global non-profit association whose main goal is to provide insight to companies and investors on how to create and sustain value. The idea to form the VRF originated in 2020 when IIRC and SASB announced their intention to merge and was implemented in June 2021 when the merger finally took place (VRF, 2021). VRF resources include: The Integrated

Thinking Principles, The Integrated Reporting Framework, and SASB Standards. This foundation has the following structure: SASB Board, whose mission is to issue and maintain SASB Standards, and The International Integrated Reporting Framework Board, which is responsible for creating and updating the IR Framework. The main body of this foundation is the Value Reporting Foundation Board, whose role is to fund and manage the organization. Advisory bodies include the IIRC, the SASB Investor Advisory Group (IAG), and the SASB Standards Advisory Group (SAG), while membership includes the IR Business Network and the SASB Alliance (Value Reporting Foundation, n.d.).

1.2.2. THE SUSTAINABILITY ACCOUNTING STANDARDS BOARD

Sustainability Accounting Standards Board (SASB) is an organization that brings investors and companies together to understand the financial implications of sustainability by issuing sustainability standards for 77 different industries. The goal of these standards is to meet the needs of investors by helping companies identify and manage various ESG issues that impact their value creation (SASB Standards, 2021).The SASB standards are specific to each industry and typically include 6 disclosure topics and 13 metrics that have been used by various organizations such as WHO, OSHA, ICAO, GRESB and similar.

1.2.3. THE INTERNATIONAL FINANCIAL REPORTING STANDARDS FOUNDATION

The International Financial Reporting Standards Foundation (IFRS) is a non-profit organization that works for the public interest by setting two different types of standards. The first type are accounting standards whose sole purpose is to determine

how companies disclose financial information and prepare financial statements, while the second type of standards are sustainability standards whose purpose is to help disclose sustainable, non-financial information and its impact on value creation (International Financial Reporting Standards, IFRS, 2021). As stated on their website, the benefits of IFRS standards are transparency, accountability, and economic efficiency, as these standards enable comparability of information around the world, improve the identification of risks and opportunities, and reduce the information gap between investors and companies (IFRS, 2021).

On the other hand, the International Accounting Standards Board (IASB) comprises a group of experts working independently under the IFRS Foundation, whose main task is to develop and publish accounting standards.

Until November 3, 2021, IFRS only had IFRS accounting standards of the IASB, but starting in November, when IFRS officially announced ISSB, sustainability standards became part of the IFRS Foundation. This announcement was made during the meeting of world leaders for the global summit UN in Glasgow for COP26. At this summit, the IFRS Foundation had announced three developments in sustainability (IFRS, 2021):

- Establishment of the International Sustainability Standards Board (ISSB).
- Commitment to complete the consolidation of Climate Disclosure Standards Board and VRF.
- Publication of the prototype for climate and general disclosure requirements developed by the Technical Readiness Working Group (TRWG).

1.2.4. THE INTERNATIONAL SUSTAINABILITY STANDARDS BOARD

The International Sustainability Standards Board (ISSB) is a body that operates under the oversight of the IFRS Foundation and whose primary purpose is to develop standards for sustainability disclosures under IFRS. This board was established in 2021 and consists of 14 members. The ISSB has two main tasks, namely, to prepare and issue

SDS and to develop a technical agenda in consultation with IFRS trustees and the public (Deloitte, 2021). As the ISSB is at the very beginning of its activities, the IFRS trustees brought together representatives of some organizations such as CDSB, TCFD, IASB and VRF and formed with them the Technical Readiness Working Group, whose main purpose is to make recommendations to the ISSB (IFRS, 2021).

On the same day that the establishment of the ISSB was announced, the TRWG submitted two prototypes to the ISSB for consideration. One is the prototype for climate-related disclosures, and the other is the prototype for general sustainability-related financial disclosure requirements. The prototype for climate-related disclosures, which is nearly 600 pages long, includes recommendations for 11 different sectors, such as the consumer goods sector, the financial sector, the health sector, and the like. Each of the sectors is divided into sub-sectors, so the consumer goods sector is divided into: apparel, accessories and footwear; household appliances; building products and furnishings; e-commerce; household and personal products; multi-store and specialty retailers; and distributors.

All these show us that this prototype includes all sectors and provides activity and accounting metrics for each of them, which means that in the future we will be able to measure more easily what impact the sectors have on the environment and society. The second published prototype, which addresses sustainability-related financial reporting, includes requirements, objectives, and general characteristics such as governance, strategy, risk management, frequency of reporting, and the like. According to (Technical Readiness Working Group, TRWG, 2021), the main objective of this prototype is to provide information about the key risks and opportunities a company faces that are related to sustainability while being useful to key users. According to Deloitte, one of the Big4 companies, global sustainability standards are necessary to meet the needs of global markets. These standards need to be harmonized and replace all voluntary standards and frameworks to avoid the current confusion, misunderstanding, and misinterpretation of sustainability standards (Deloitte, 2021).

1.2.5. THE CLIMATE DISCLOSURE STANDARDS BOARD

The Climate Disclosure Standards Board (CDSB) is a non-governmental organization dedicated to advancing corporate reporting to achieve alignment between natural and financial capital. Its work is based on contributing to a more sustainable and transparent economy. Various parties benefit from the CDSB's work, including investors (who can make better allocation decisions based on the high-quality environmental information provided by companies), analysts (who get a clearer picture and better prediction of future cash flows), companies (the CDSB framework enables companies to understand how environmental issues can impact their performance and vice versa), stock exchanges (provides more opportunities to expand on existing listing requirements, e.g., on climate change), and accounting firms (enhancing the audit capabilities of accounting firms) (Climate Disclosure Standards Board, CDSB, 2021).

1.3. INTEGRATED REPORTING FRAMEWORK

The main idea of an IR framework is to explain the purpose, mission, and vision of IR and to define IR content elements and guiding principles. Although the framework is primarily focused on the private sector, it can also be used and applied by non-profit organizations and the public sector.

As reported by the International Integrated Reporting Council (IIRC, 2021, p. 10), IR represents a way of communication in which companies use their performance, strategy, and governance to present future value creation to their stakeholders in the short, medium, and long term. According to this, we can understand that IR is not just a summary of all information, but rather a way to combine all financial and non-financial information and present it in a way that allows the reader to understand the company's value creation goals.

In 2013, the IIRC published the first "Integrated Reporting Framework", which was updated in January 2021 with the release of a new framework. The second, i.e. updated,

version includes an additional chapter dedicated to reporting guidance at IR. This chapter provides additional information and guidance on the disclosure of material matters and capital items, explains the short-, medium- and long-term timeframes, and provides more detailed information on aggregation and disaggregation.

1.3.1. MATERIAL MATTERS AND CAPITAL ITEMS

With regard to material matters, according to International Integrated Reporting Council (IIRC, 2021, p. 49), the most important relevant information must be disclosed in the report, and, in the case of uncertainty, the company must show readers the possible consequences of this uncertain situation.

In addition, the key performance indicators (KPIs) should have the following characteristics: Relevance, consistency, context, and presentation for more than one time period so that we can identify trends. The time frame may vary from industry to industry, depending on their production cycles and strategies. For this reason, each company should decide for itself what the short-, medium- and long-term timeframes are for adding value and publishing a IR.

Value creation can manifest itself through various changes in capital caused by the company's activities or the external environment. In accordance with the IIRC, IR should include information on six different types of capital: financial, productive, intellectual, human, natural, social, and relational.

For better understanding, the definitions of capital in (IIRC, 2021, p. 19) are as follows:

- Financial capital includes funds obtained through the production of goods or services and through various types of financing.
- Manufacturing capital is usually created by other organizations for the purpose of using it in their own business and represents physical objects such as buildings, infrastructure, and equipment.

- Intellectual capital is associated with the ownership of patents, licenses, software, and the like.
- Human capital includes the experience and expertise of employees.
- Natural capital such as water, forests, land, and all other renewable and non-renewable environmental resources.
- Social and relational capital represents the relationships a company has with institutions and communities.

Despite the fact that the framework suggests the above types of capital, since companies have different ways of creating value, each company itself has the opportunity to decide which of the capitals are relevant to declare in the IR.

IIRC (2021, p. 14) states that the employees responsible for corporate governance must confirm their responsibility to ensure the integrity of a IR. In addition, a IR should indicate the extent to which the published report is presented in accordance with the IR framework. One of the main purposes of IR is to clearly present information to the public, but if some information could significantly harm competition, that information could be withheld.

1.3.2. GUIDING PRINCIPLES

As mentioned earlier, the framework includes guiding principles that help in the preparation of a IR in the way that these principles indicate the content and manner in which the information should be presented (IIRC, 2021, p. 25).

Guiding principles include strategic focus and future orientation, information connectivity, stakeholder relationships, materiality, conciseness, reliability and completeness, and consistency and comparability.

Strategic focus and future orientation mean that companies should include information in their IR that enables readers to understand the relationship between the company's strategy and its role in creating value in the future. This includes information about any

significant risks the company may face in the future that could affect the company's position in the marketplace, as well as opportunities and how the company plans to exploit them to create value (IIRC, 2021, p. 25).

The connectivity of information as the second guiding principle is very important as it should provide a holistic picture of how each factor in the company is related to the other and how it contributes to value creation. According to the International Integrated Reporting Council (IIRC, 2021, p. 26), connectivity refers to the connectivity of content elements, financial and non-financial information, capital, quantitative and qualitative information, and the link between past, present and future. As mentioned by (Busco C., 2013), the principle of connectivity is considered crucial as it allows IR to present a holistic picture of the company's ability to create value over time, resulting in an effective IR. This means that the information contained in IR should be presented in a way that clearly depicts the company's strategy and desired performance. To achieve this, all types of information (qualitative, quantitative, financial, non-financial) are critical and only with all this information will the reader be able to understand the company's ability to create value.

Stakeholder relations is an important guiding principle because it supports the idea that value is not only created within the organization, but by working with it. This does not mean that IR must provide information that meets the needs of all stakeholders, but it should include information about the most important stakeholders. In terms of stakeholder satisfaction with the information provided, what is meant by this is that all published information must be accountable, transparent, and should demonstrate that stakeholder needs, and desires are understood by the organization and addressed through decisions, actions, and performance (IIRC, 2021, p. 28).

According to the definition of AccountAbility (2006), material information is information that, if not mentioned, would influence the economic decisions of users. In terms of materiality, a fact should be of reasonable importance in terms of its ability to influence value creation. In other words, relevant information is that which can influence the ability of companies to create value (IIRC, 2021, p. 30). It is of great importance to include both positive and negative matters that may have a direct or indirect impact on value creation. Furthermore, the matters included may not only be

financial but also non-financial in nature, and in such a situation, it must be clearly explained in what way the matter in question could affect value creation.

Conciseness of an IR means that the information it contains must be clearly expressed without being burdened with information that is not relevant (IIRC, 2021, p. 33).

To gain a better insight into the principles of reliability and completeness, it is useful to explain the respective terms separately. First, in order for information to be accepted as reliable, it must be free of material error and not be biased (IIRC, 2021, p. 34). Second, like the materiality statement given earlier, complete information must include positive and negative information, because only then will IR be complete and give readers a clear overview of the company's market position and its ability to create value in the short, medium, and long term.

In terms of consistency and comparability, this means that the reporting policy should not change from one period to another, unless this change would not contribute to improving the information presented. Comparability can be achieved by reporting the information as a ratio or by using benchmark data (IIRC, 2021, p. 36).

1.3.3. CONTENT ELEMENTS

In addition to the guiding principles, a framework suggests content elements that companies can use to compile a IR. The content elements suggested by the framework should not necessarily be shaped in the same way, but rather in such a way that the link between them enables the company to communicate its information to the reader and explain plans to create value.

Content Elements are as following (IIRC, 2021, p. 38):

a) Organizational overview and external environment
b) Governance
c) Business model

d) Risks and opportunities
e) Strategy and resource allocation
f) Performance
g) Outlook
h) Basis of preparation and explanation

The overview of the organization and the external environment should include information about the company's employees, revenues, macro and microeconomics, industry, ownership and operating structure, activities, and the like, so that users of IR can understand what factors inside and outside the company may influence the company's vision and mission.

Governance as part of an IR should provide us with information on how the people charged with managing the company are able to influence the company's value creation in the future, as well as detailed information on their skills, backgrounds, and gender (IIRC, 2021, p. 40)

As stated in IIRC (2021, p. 41), the business model includes inputs, business activities, outputs, and outcomes, and information on these factors must be included in a IR. When providing information on inputs, it is not sufficient to provide a list of inputs, but it is necessary to explain how these inputs will be used with the sole purpose of creating future value. The business activity’s part should explain what the company's market position is and how it differentiates itself from other companies, as well as innovation plans to adapt to change. The output part contains information about the company's main products and services, and must include any relevant information about waste, pollution, and the like. The output part should provide information on positive and negative, internal and external consequences, such as employee morale, revenue, reputation, environmental impact, customer satisfaction, and the like.

Following the risks and opportunities content element, an IR published by an organization should include all relevant information about risks and opportunities that the organization may face in the future. It is not sufficient to simply mention them, but an assessment should also be made of the likelihood that they will occur and their impact on the organization's ability to create value. It is noted that a risk that could have

a large impact on value creation, even if the probability of occurrence is minimal, must be included in a IR (IIRC, 2021, p. 44).

The strategy and resource allocation section should provide an appropriate response to how the company allocates its resources to achieve its strategic plans in relation to value creation in the short, medium and long term, and how the results achieved are measured (IIRC, 2021, p. 44).

The performance section of a IR aims to explain the extent to which the company has achieved its stated strategy and objectives, and what results it has achieved from a capital perspective. This section also aims to provide a link between past and current performance, which together form the company's outlook (IIRC, 2021, p. 46.)

The outlook aims to connect many different factors, such as the impact of the external and internal environment, risks and opportunities that could affect and change the company's performance, its business model and its ability to create value. All these factors are presented transparently, and the information included is relevant to the matter.

The basis of preparation and explanation as a substantive element provides information on how the entity has decided which matters are relevant, how those matters have been evaluated or measured, and if there were limitations, it provides an explanation (IIRC, 2021, p. 47).

CHAPTER 2. HISTORICAL OVERVIEW AND GLOBAL PRACTICE IN INTEGRATED REPORTING

2.1. HISTORY OF REPORTING

Figure 3 displays information on the development of reporting throughout the years starting from "Double sided accounting register" until the time when IR became a new phenomenon in the reporting world.

Figure 3 History of Reporting

Source: Created according to information published in “Reporting Matters- SKD Turkiye 2017 Raporu”.

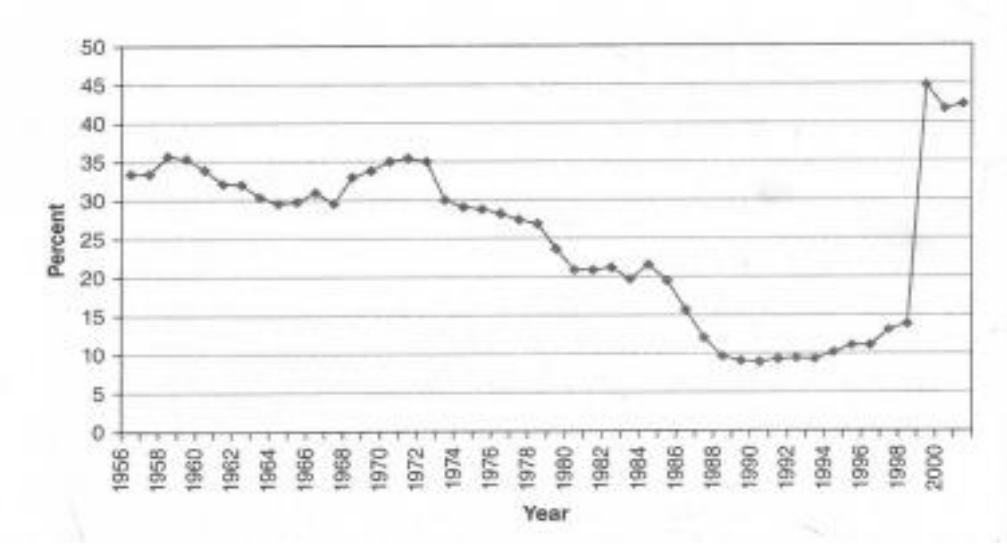
In Figure 3, the red labeled part is presenting innovative reporting initiatives adopted in Turkey.

2.2. THE CASE OF SOUTH AFRICA

2.2.1. KING I PRINCIPLES

South Africa is the first country where the application of IR is mandatory. The country’s journey towards IR started a long time ago and there are certainly different reasons for its application than in other, e.g., European, countries. In 1973, the Companies Act was enacted whereby companies could withhold information from auditors if it was related to the "national interest" (Eccles, 2015, p. 5). This law was passed to attract foreign investment as foreign capital began to decrease in response to the anti-apartheid situation.

Figure 4: Foreign Direct Investment in South Africa as a Percent of GDP



Source (Eccles, 2015, p. 4)

As can be seen from the Figure 4 above, the share of foreign direct investment in South Africa's GDP has declined from about 35% in 1956 to almost 10% in 1996. Most of the problems related to foreign direct investment (FDI) and a variety of economic issues were addressed when the King Committee was established in 1992 with the aim of developing standards for corporate governance (Eccles, 2015, p. 5)

King I, or by its full name the first King Code of Corporate Governance Principles, published in 1994, focused on defining the role of the board and how it should serve the company itself rather than a group of stakeholders. Although the Code was principles-based, it was adopted by the the Johannesburg Stock Exchange (JSE) on a "comply or explain" basis (Eccles, 2015, p. 6).

2.2.2. KING II PRINCIPLES

In 2002, the King II or the second King Code of Corporate Governance was published. This paper addressed sustainability, risk management, and internal audit issues.

To focus on more effective corporate governance, King II used the African value system called the spirit of Ubuntu, where "Ubuntungubuntu" means the following:

"I am because you are, you are because we are. We are interconnected beings; we function best when we take care of each other."

Like the King I, the King II was on a "comply or explain" basis. The goal of both codes was to place South Africa at the forefront of international corporate governance.

2.2.3. KING III PRINCIPLES

The King III, with a total of 76 principles using the "comply or explain" approach, was published in 2009 and is to be applied from 2010.

This code contains the most important improvement, namely the instruction that companies should publish all relevant financial and non-financial data in a single annual report. In this way, South Africa became the first country to begin requiring the use of IR on an "comply or explain" basis in 2011 (Eccles, 2015, p. 1). According to the "comply or explain" rules, all companies listed on the JSE had to publish an IR and in case they did not publish a report, they had to provide a valid reason.

Based on the King III, the Integrated Reporting Council of South Africa published the "Framework for Integrated Reporting and the Integrated Report Discussion paper" in 2011. This report presented three different categories of principles which focused on the content and information that a company should present and suggested that the information must be relevant, complete, neutral, error-free, comparable, consistent, timely, etc. In addition, the report suggested that any published IR should be confirmed by a third party.

Starting from 2011 and the mandatory publication of IR on the JSE, the "Big Four" companies began to pay attention and conduct surveys to track the publication of IR. Accordingly, the firm Deloitte proposed 15 different frameworks, standards, and regulations in its 2012 report IR (Eccles, 2015, p. 11).

2.3. COUNTRY PRACTICE

As mentioned above, it is believed that the start of IR in the world began with the creation of the IIRC in 2010 and companies listed on the JSE are required to publish an IR on a "comply or explain" basis as IR is aligned with the King Code.

As can be seen on the Integrated Reporting Foundation website (Integrated Reporting Foundation, n.d.), there are two possible levels of how countries and companies have published their IR. Level 1 means that the IIRC and/or the IR Framework have been referenced in the published IR, while Level 2 means that at least two capital letters required by the Framework are explained in the report in addition to the citations.

In addition to South Africa, as published on the website, the countries are reported which are the main supporters of the IR movement, and the number of reports published by each country is provided. These countries include Australia, New Zealand, Japan, Singapore, India, Malaysia, the European Union, the United Kingdom and Brazil.

2.3.1. AUSTRALIA

Australia, as part of the IR Business Network whose sole objective is to support the adoption of IR, participated in the IR movement in 2011 when its main accounting firm, CPA, published the first combined GRI sustainability report.

In addition, the G100, the association which is representing Chief Financial Officers from different companies and various sectors such as:banks, private companies, accounting firms, agreed that IR is a path to better and clearer communication with shareholders because it allows flexibility and supports the explanation of non-financial matters (Integrated Reporting Foundati on, n.d.).

The increase in adoption of IR in Australia was confirmed by a survey conducted by KPMG in 2020. The results of the survey shown that about 79% of Australian ASX200 companies have adopted integrated reporting and that most companies have focused on explaining long-term value creation rather than short-term value creation and that this explanation is not only based on historical financial results but also includes non-financial data (KPMG, 2020).

2.3.2. NEW ZEALAND

The main proponent of IR in New Zealand is the External Reporting Board (XRB), which is currently considering the introduction of IR in New Zealand, as well as the extent to which it should be required.

We can see their support, but also their concerns, from their survey on the review of the IR framework, in which they state, among other things, that they are behind the IIRC and the IR framework and that those charged with governance should provide a statement of responsibility, and they provide their own suggestions on the glossary, outcomes, and outputs of the framework in this report (XRB, 2020).

The country that was one of the countries with the most published IR in the world in 2019, according to a KPMG survey, is Japan. IR is increasing year by year, and in 2020, out of 579 companies that published a IR, 33 companies were unlisted, while the remaining 549 were listed. The dominant industries are electronics, chemicals, and machinery (KPMG, 2021).

2.3.3. SINGAPORE

With the idea of supporting the implementation of IR in Singapore, the Institute of Singapore Chartered Accountants (ISCA) prepared a report based on the experiences of two major companies, DBS Group Holding and Maritime and Port Authority (MPA) of Singapore. DBS participated in the pilot program organized by the IIRC and officially published its first IR in 2013 (Institute of Singapore Chartered Accountants). In 2014, MPA was one of the first public sector organizations to publish its first IR, which includes all of its inputs, activities, and outputs and explains how they relate to the future.

2.3.4. INDIA

As for the position of IR in India, one of the biggest steps towards the introduction of IR was published by the Securities and Exchange Board of India (SEBI) in 2017. According to this circular, the 500 largest companies were recommended to implement IR on a voluntary basis from the financial year 2017-18 (SEBI., Securities and exchange Board of India, 2017).

2.3.5. MALAYSIA

In 2014, the Integrated Reporting Steering Committee (IRSC) was established in Malaysia by the Malaysian Institute of Accountants (Malaysian Institute of Accounting, MIA, n.d.). The purpose of this committee is to provide the necessary support to companies adopting IR, to ensure the development and continuity of IR, and to inform stakeholders and organizations about IR.

2.3.6. EUROPEAN UNION

According to the Directive (European Parliament, 2021), about 6000 of the largest companies in the European Union are currently required to publish non-financial information based on the 2014 Directive, which took a big step towards sustainability and integrated thinking. However, in their view, this was not enough, so the said directive was revised with the aim of better and more accurate presentation of non-financial information, including risks, opportunities, and impacts, so that investors can make their decisions with greater accuracy.

2.3.7. UNITED KINGDOM

In the United Kingdom, the Financial Reporting Council (FRC) is responsible for regulating accountants, auditors, and actuaries, as well as setting their corporate governance and stewardship codes. According to (Financial Reporting Council, 2018), in its recommendation for the strategic report, the FRC recommends the disclosure of non-financial information and focus on long-term value creation, as also mentioned in the IIRC Framework.

2.3.8. BRAZIL

In 2012, the Brazilian Stock Exchange announced the Report or Explain for Sustainability or Integrated Reports, with the main objective of motivating companies to report non-financial information on society and the environment. This report was updated in 2016 when it was added that companies should provide information on methodology, audit status, and information on where to find this information (Green Finance Platform, 2018). With the intention of providing more information about the global IR movement, we will look at specific cases at IR since the beginning of the IR era. We will present cases from different countries, continents, industries, and scales.

2.4. COMPANY PRACTICE

Besides the countries listed above, it is of great importance to mention some pioneering companies in the IR Practice.

2.4.1. NOVOZYMES

The Danish biotechnology company, Novozymes is one of these companies. In 2002, this company had published an annual report that caused a debate because many translate it as "Integrated Report" while others accept the translation as "Combined Report" (Eccles, 2015, p. 34). This report stood out from other reports of the year because it presented both financial and non-financial information in a way that clarified how they related to each other and how these types of information impacted the success of the company.

2.4.2. NATURA

While Novozymes in Denmark was the first company to adopt the linkage approach, Brazilian cosmetics and personal care company Natura published its IR the same year. Like the Danish company, Natura included non-financial information, but the main feature that Natura was the first to use was supply chain and life cycle management. In addition, their report follows the GRI indicators.

2.4.3. PHILIPS AND UTC

In addition to the aforementioned "IR pioneers", just two years before the IIRC was established, the Dutch technology company "Philips" and "United Technologies Corporation" (UTC), a U.S. manufacturing company, claimed to be the first to publish a IR. In a report published by Philips in 2008, the term "integrated report" was mentioned only once, while UTC never used the term "integrated report" in the report of the same year but stated in the 2009 press release that they were among the first companies to publish an IR (Eccles, 2015, p. 38).

2.4.4. ENI

One of the largest companies that was one of the first to start publishing an IR is "Eni". In terms of market value, Eni is the sixth largest integrated energy company and is present in 90 countries. Eni's journey towards IR began in 2010, when Eni published an annual report that stood out from other reports because it focused on explaining the business model in great detail, as later required by the IIRC framework, even though the IR framework did not yet exist with all its specifications. In addition, Eni is relevant to IR because Eni is one of the companies that participated in the pilot program organized by the IIRC in 2011. In this way, the staff responsible for the creation of IR managed to create an IR for the Eni Group and published it in 2013 (Busco, 2013, p. 214). Unlike previous annual reports published by Eni, the 2013 IR included chapters and explanations on strategic direction, risk management, performance, and linkage to future value creation.

2.4.5. VODACOM

Another interesting company that has published and listed on the JSE since it began compiling the IIRC IR is Vodacom Group Ltd. Vodacom is a mobile telecommunications company founded in 1993 that provides services in South Africa. For its first two published IR in 2011 and 2012, Vodacom won three different awards, the first in 2011 when it was among the top 10 of the "Nknonki Top 100 Integrated Report Awards", the second and third awards the company received for the IR in 2012 (Busco, 2013, p. 213). In 2012, it first won first place in the same competition where it was awarded the "Nknonki Top 100 Integrated Report Awards" in 2011, and the second award for the same report was a placement in the top 10 in the "Excellence in Integrated Reporting Awards" by Ernst and Youngs. Their report was divided into six main sections, "Overview," "Our Business," "Strategic Overview," "Financial Overview," "Corporate Governance," and "Administration" (Busco, 2013, p. 240).

2.4.6. SMITHFIELD FOODS

Smithfield Foods Inc. is a food company present in many countries with twelve main brands such as Margherita, Armor, Carando and similar and is traded on the New York Stock Exchange (Busco, 2013, p. 257.). Smithfield's first published IR is from 2012 and the title "We combine Leading Brands and a Commitment to Sustainability to produce Good Food. Responsibly" can be related to some of the concepts of IR. The word responsible can be associated with sustainability and resource use with the goal of adding value.

2.4.7. MONNALISA

Monnalisa was founded in Arezzo, Italy, as a designer and retailer of children's clothing and accessories and is a medium-sized company. Since its beginnings, the company has worked to differentiate itself from its competitors by offering products with high style, the so-called "Total Look Concept". Monnalisa's sustainable reporting journey began in 2003, when the company first published a social and environmental report that included three main sections: Corporate Identity, Financial Importance and Social Importance. However, from the 2005 report onwards, the company showed its commitment and focused on communicating the results to its stakeholders, which earned it the 2006 Oscar award for the Italian Annual Report. Over the years, the company worked to improve its reporting, which led to the creation of a concept that presents 7 main themes of the company in relation to future value creation. These themes are: Maintaining a strong identity, ensuring economic sustainability, high quality, innovation, promoting valorization, transparent communication, contributing to territorial development. Monnalisa's hard work and improvements were recognized again in 2011, when the company won the Oscar for its annual report for the second time. IR was praised as a document that is complete and considers value creation in an innovative way. (Busco C., 2013).

2.4.8. ESKOM

As mentioned above, the publication of King III has obliged companies in South Africa listed on the JSE to publish a IR. This obligation includes Eskom, which was established in 1923 and is the main electricity supplier in South Africa. In addition to the above obligation, Eskom participates in the IIRC pilot program and published its first IR for 2011-2012. Its report adopted the guiding principles and content elements proposed in the 2011 IR framework. As a result, the report was divided into nine main sections, including: Governance Overview, Corporate Information, Corporate Governance, Operational Context, Value Chain Performance, Service and Strategic Functions, Financial Performance, Future Prospects, and Appendices. Including all of the above parts, Eskom has succeeded in providing information on its financial and non-financial KPIs and plans for future value creation, which is one of the main objectives of the report. IR (Busco C., 2013)

CHAPTER 3. INTEGRATED REPORTING IN TURKEY

3.1. SUSTAINABILITY REPORTING

Sustainability is becoming an increasingly popular topic around the world, which is why companies have had to incorporate it into the business world. By paying attention to the issue of sustainability, they are sending a message to their stakeholders that the financial part is only important if the way the financial gain is made is in accordance with the rules of sustainability. This means that companies do not harm the environment or society in the way they do business, and that their governance is done in a way that benefits everyone. Due to the importance of sustainability, some countries have developed legal instruments that support sustainability in the country.

Some of these countries and legislatives were published in "Reporting Matters" published by SKD in 2017 are:

- Greece (Sustainability Law)
- Poland (Warsaw Stock Exchange Rules)
- Austria (Law on Sustainabilityy and Diversity Promotion)
- United Kingdom (Mandatory Gender Discrimination Reporting)
- France (Energy Transition Law)
- South Africa (Governance Law)
- Germany (CSR Enforcement Law)

3.1.1. ESG SCORES

It is important to mention that the IR framework is associated with the Principles for Responsible Investment (PRI), which show a way to integrate ESG into investments. There are a total of 6 principles that focus on incorporating ESG into investment and decision-making processes, working to implement the principles, focusing, and

investing in companies that disclose ESG (Principles for Responsible Investment, 2022). To achieve ESG investment, it is vital to integrate ESG factors into investment management through various investment analyses.

From the statement published on (Refinitiv, 2021), which has one of the largest databases in the world and publishes ESG scores for about 9.000 companies worldwide, ESG is a current measure calculated based on the valid data. It consists of more than 500 company-level ESG metrics, of which 186 are the main subset. There are 10 main groups, 4 of which belong to the environmental pillar (resource use, emissions, innovation), 4 of the groups are related to the social pillar (employees, human rights, community and product responsibility) and the remaining 3 groups explain the governance pillar (management, shareholders and CSR strategy). Purpose of these scores is to objectively measure and presents company data regarding the ESG performance.

Figure 5: ESG Score Explanation

Score range	Grade	Description
0.0 <= score <= 0.083333	D -	'D' score indicates poor relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly.
0.083333 < score <= 0.166666	D	
0.166666 < score <= 0.250000	D +	
0.250000 < score <= 0.333333	C -	'C' score indicates satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly.
0.333333 < score <= 0.416666	C	
0.416666 < score <= 0.500000	C +	
0.500000 < score <= 0.583333	B -	'B' score indicates good relative ESG performance and above-average degree of transparency in reporting material ESG data publicly.
0.583333 < score <= 0.666666	B	
0.666666 < score <= 0.750000	B +	
0.750000 < score <= 0.833333	A -	'A' score indicates excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly.
0.833333 < score <= 0.916666	A	
0.916666 < score <= 1	A +	

Source: (Refinitiv, 2021)

From Figure 3, we can see the ESG scores and the explanation of the scores. The range of scores is from 0 to 1, while the grades range from D- to A+, where A+, corresponding to a score of 0.916666 < 1, represents the best possible score and the

highest level of transparency, while D- or 0.0 < 0.08333 represents a minimal and insufficient level of transparency.

Figure 6: Global Coverage regarding ESG scores by Refinitiv

Source: (Refinitiv, 2022)

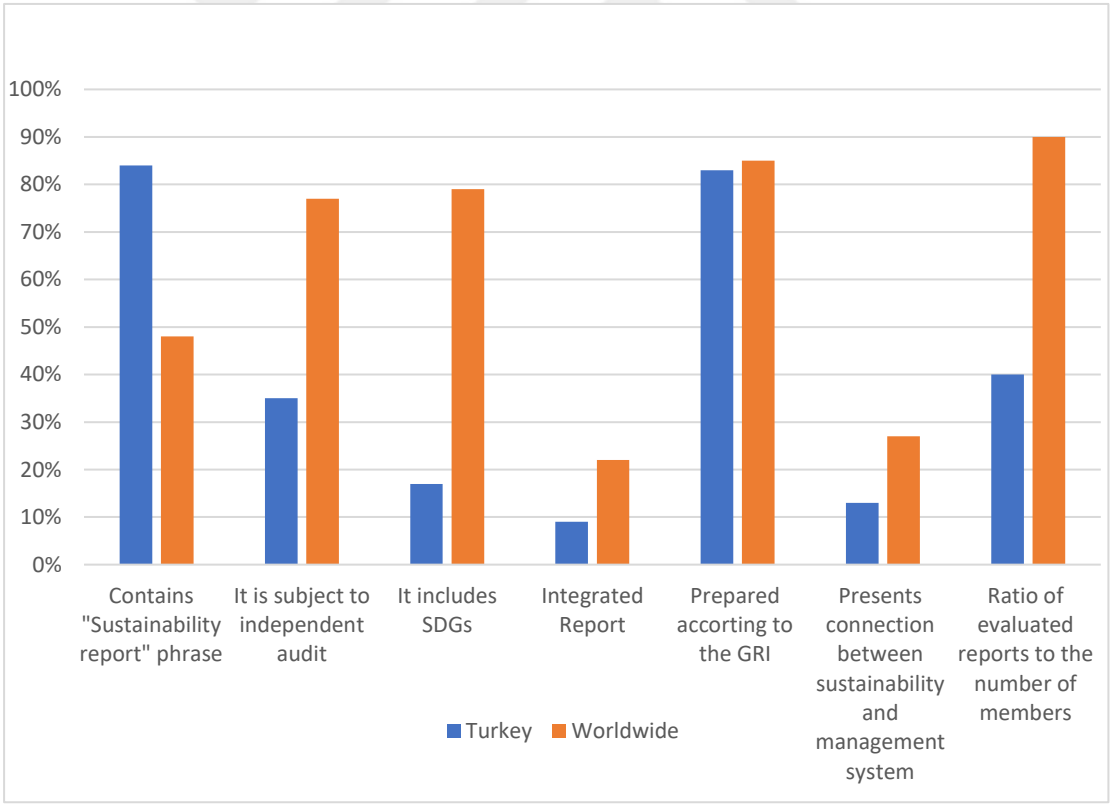
3.1.2. SUSTAINABILITY IN TURKEY

Ensari et al. (2015) whose study aimed to investigate the trends in sustainability reporting from 2004-2014 in Turkey for the 250 Fortune companies, found that the number of published sustainability reports tended to increase. One of the findings of their research is that at the beginning, mainly companies that are older and have an average number of employees of 3,461 started to publish SR. In addition, the shares of companies that publish SR have increased and their capital structure has changed. Another study that examined the status of SR in Turkey for the years 2008-2017 was conducted by Gumrah and Buyukipekci (2019). In this research was stated that even though number of published sustainability reports has increasing trend in Turkey year to

year and that observing from economic and environmental perspective these reports are well prepared social side is neglected. Moreover, most of the published reports are prepared by big companies while reason for the low number of SR published by small and medium sized companies according to them is that they have fewer opportunities to collect data.

In 2017, 23 sustainable reports were reviewed and compared to reports worldwide. This was done with a purpose of benchmarking Turkish companies reports with companies from other countries so that findings can point out areas that need improvement. Findings were published in the "Reporting matters" report published by SKD and in the following table we can see some of the results.

Figure 7: Sustainability Reports in Turkey Contrasted to Worldwide Reports



Source: Author's compilation based on information published on http://www.skdturkiye.org/files/yayin/skd_turkiye_reportingmatters_3.pdf

Besides presented information in the Figure above the report indicates that the shortest sustainability reports out of 23 reviewed was 10 pages long, while average page number was 78 pages. Moreover, average publishing time was 4 months.

From all the above mentioned we can understand that sustainability reporting has increasing tendency in Turkey but in the same time there is a place for improvements such as giving more attention to society and information regarding it.

3.1.3. BORSA ISTANBUL SUSTAINABILITY INDEX

BIST The Sustainability Index, the calculation of which began on November 4, 2014, is published as Price and Yield with the code XUSRD. This index has four different calculation periods, namely: January-March, April-June, July-September and October-December. The index provides information on the extent to which companies consider sustainability issues such as natural resource depletion, health, safety, and global warming. This index is valuable to both companies and investors. Companies can benefit from this index in that it allows them to benchmark their sustainability performance within and outside the country. In addition, companies can use this index to manage risks and anticipate opportunities, such as attracting new investment. Investors can use this index to select and place their investments in companies that are socially responsible.

Companies that wish to be included in the BIST Sustainability Index must follow the following rules (Borsa Istanbul, 2022):

1. the overall sustainability score must be at least 50 or higher

2. each main title (according to Refinitiv, there are 3 main titles: environmental, social, and corporate governance) must be at least 40 or higher and,

3. at least 8 (there are 10 categories in total) of all categories must be 26 or higher

3.2. INTEGRATED REPORTING

3.2.1. INSTITUTIONAL CAPACITY BUILDING

The beginnings of integrated reporting in Turkey date back to 2011, when the Corporate Governance Association of Turkey (TKYD), together with the Sustainable Development Society Turkey (SKD), established a working group to raise awareness of IR in Turkey (ERTA, 2020).

In 2013, the working group prepared a project that was one of the most important steps towards the acceptance of IR in Turkey. Through this project "New Era in Corporate Reporting: Integrated Reporting" proposed and with its adoption and publication by the Turkish Industry and Business Association (TUSIAD), the first guide for IR in Turkey was published (ERTA, 2020). In addition, the establishment of the Integrated Reporting Turkey Network - ERTA was approved as part of this project and its official launch took place in 2016.

The second major step that brought Turkey closer to the IR movement was in November 2017, when the Borsa Istanbul (BIST) signed a cooperation agreement with IIRC, which included the dissemination of information on IR within the borders of Turkey (Aras et al., 2019). Another step that shows BIST 's commitment to IR is that it is the first European exchange to publish a IR, setting an example for exchanges and companies around the world (Aras et al., 2019).

Figure 8: Foundation of Integrated Reporting Turkiye (ERTA)

Source (ERTA, 2021)

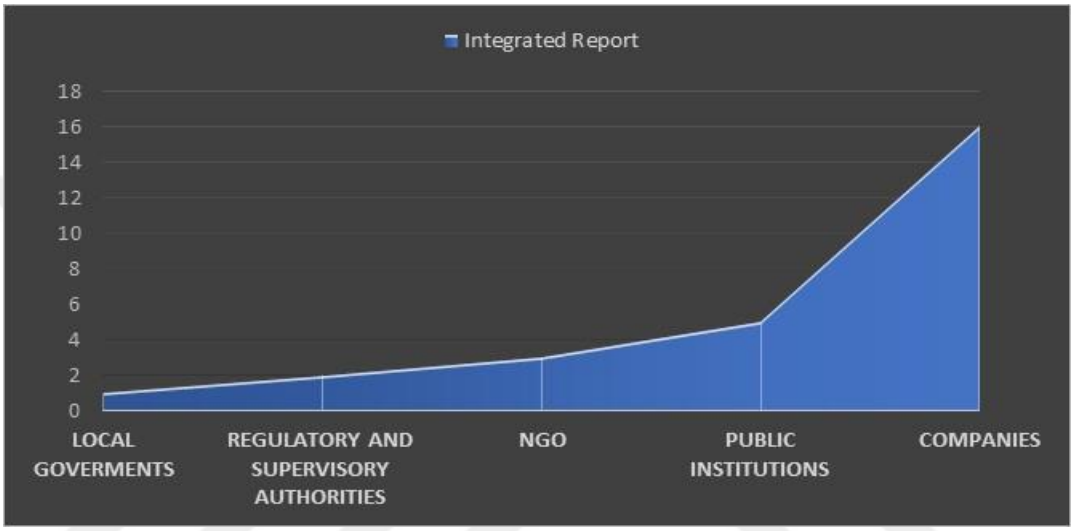
From the Figure 5, we can see the milestones of the development of IR in Turkey from 2011 to 2016. An important part that is missing from this figure is the 2018 protocol that was signed between the IIRC and ERTA, making ERTA an international partner of the IIRC (Aras et al., 2019).

As a final step, with the sole aim of expanding and adding value to the IR network in Turkey, ERTA together with the Turkish Investor Relations Society (TUYID) created an "Integrated Reporting & Investor Relations Platform (IR & IR). The main idea of IR &IR is to support the development of companies through IR and to improve communication between companies and investors by explaining the concept, guidelines, and roadmaps of IR (ERTA, 2021). In addition, ERTA published an "Integrated Reporting Guide for Companies" in April 2022 with the aim of supporting companies in publishing a IR.

3.2.2. INTEGRATED REPORT PRACTICE

Figure 10 shows that there are 66 published IR in Turkey as of November 2021. Among all published reports, companies have published the most (16 in total) and local governments have published the least (1 in total).

Figure 9: Number of Integrated Reports published in Turkey until November, 2021



Source: Author's compilation using information published on ERTA website

Figure 10 was created based on information published on the website (ERTA, 2021). According to this website, Arguden Governance Academy published the most reports (6 in total), followed by Cimsa and the Turkish Development and Investment Bank (TSKB), which published the same number of reports (5 each).

As presented by ERTA (2021), the first IR in Turkey was published by Arguden Governance Academy in 2015, TSKB published the first IR in the Turkish financial industry in 2016, while the first integrated annual report in the Turkish real estate sector was published by Cimsa in 2016.

CHAPTER 4. THE IMPACT OF INTEGRATED REPORTING ON COST OF CAPITAL AN EMPIRICAL ANALYSIS

4.1. THEORETICAL MOTIVATION

4.1.1. RESEARCH OBJECTIVE

As mentioned earlier, IIRC was created in 2010 and the first IR framework was published in 2013, updated version in January 2021. According to Barth (2017), because of apartheid history in South Africa, "comply or explain" regulation came into force on the JSE and all listed companies had to publish an IR. If they did not publish a report they had to give reason why not. In this way, appliance of IR in South Africa became mandatory.

On the other side, even though IR is still on voluntary basis in most of the countries, the number of published IR from companies is growing year by year according to several studies [please see (Vena, 2020) among others]. This is confirmed by a survey by KPMG (2017) which states that around 15% of the best 100 companies based on their revenue published IR. Such an increase in the number of published IR reports can be connected with the general understanding of main purposes of IR.

According to Hoque (2017), the most effective way of communication between company and its stakeholders is through a report. In this way they can, through connection of all relevant information (financial and non-financial), explain how they are planning to achieve value creation over time. In regards to connectivity IR underlines importance of linking the capitals with each other. Research done by Gerwaski (2020) found that firms which are part of less concentrated sector as well as the companies which have complex business models are presenting low degree of connected capitals.

On the contrary, organizations which are more relying on debt providers and which are having better financial and non-financial performance are showing larger degree of capital connectivity. Another research by Santis and Bianchi (2020) focused on financial industry (i.e. banking sector) where they investigated until what extent they are including all six of capital forms required by IR Framework with sample of 45 banks throughout five years (2014-2018). Their findings showed that only 36% of included companies included all six types of capital while 13% provided information only about financial capital. This implies that the process of integrated thinking is still evolving and it has a great potential in creating value considering different capital forms.

At this point there is a limited number of research made on the topic of IR and its impact on the cost of capital. This study aims to contribute to the existing literature by establishing the nexus between IR and the cost of capital. This study distinguishes itself not only because it is conducted timely when two major changes regarding IR had occurred (first is new IR Framework and second is ISSB establishment) but also because it incorporates ESG scores in the empirical model. Having acknowledged that IR includes ESG, by doing so, we explore the moderating role of IR on the relationship between ESG scores and the cost of capital as well.

4.1.2. LITERATURE REVIEW

Wong et al. (2020) examined the impact of ESG scores on the cost of capital. Using a sample of Malaysian companies from the Bloomberg ESG database, considering 5 years before and after ESG inclusion, they found that the cost of capital decreases by 1.2% on average and Tobin's Q increases by 31.9%.

Karwowski et al. (2021) used data from the integrated reports of 124 companies from different sectors and regions (note that three companies were from Turkey: Garanti, TSKB and Arguden) in their research to determine the number of reported risks related to ESG measures. The results show that government and social risks such as labor

safety and impact on local society are the most frequently reported, while frequently taken measures include safety initiatives, labor relations, community empowerment, and stakeholder communication.

Moreover, from the aspect of the relationship between ESG and IR, we can see in the study of Mervelskemper and Streit (2017) that, IR can improve the way the market evaluates a company's ESG performance without incurring additional costs. Moreover, the authors mention that IR provides a clearer explanation of how ESG and corporate governance can be converted into market value, as opposed to a pure ESG report, showing the superiority of IR over ESG reports.

Albitar et al. (2019) studied IR and ESG in their research conducted for the period between 2009 and 2018 with a sample of 350 FTSE companies. They found that the financial performance of companies that apply IR is higher than the financial performance of companies that do not publish IR. Moreover, this study mentioned that the interaction between and IR and ESG is positive, which means that IR plays a moderating role in the relationship between ESG and financial performance.

Using the sample of 187 companies for the period 2009-2019, Rabaya and Saleh (2021) found that IR can increase and strengthen the link between ESG and firms competitive advantage, as companies that publish a IR show their interest and commitment to ESG practices. This improvement can be achieved through increased transparency, accountability, corporate reputation, stakeholder trust, etc.

Aboud and Diab (2018) studied the impact of ESG on company value by combining two factors, ESG index and ESG ranking. They found a positive relationship between both factors and company value, which means that a higher ESG index listing and a higher ESG ranking within the index listing contribute to the increase in the value of the company. This research included companies from Egypt listed and ranked in the Egyptian Corporate Responsibility Index for the period from 2007 to 2016.

Saygili et al (2021) considered in their sample companies listed in Borsa Istanbul Corporate Governance Index (XKURY) for a period of 10 years (2007-2017). In their study, they used 20 different independent variables such as voting rights, environmental ratios, human resource policies, ethical rules and social responsibility, etc., and found a

negative relationship between environmental ratios and financial performance of companies in Turkey.

Empirical research on the importance of IR to the capital market conducted by Zhou (2017) showed that IR matters to the market in at least two different ways. They investigated whether companies offering IR have a lower cost of equity and whether the interpolation of IR with the IR framework can affect analysts' forecasting accuracy.

Apart from the aforementioned studies, Cosma (2018) investigated the importance of the quality of IR to the market. The quality was examined using a sample of companies on the JSE that included price announcements in their published IR. The results presented in this study show that award announcements can increase the value of the company in the stock market, as a positive reaction was found. Moreover, the increase in value is consistent and increases over time.

Pistoni (2018) discussed and conducted an empirical analysis of the quality of IR. Their study included a sample of 116 IR issued over two years. They developed and examined a scorecard model and concluded that the quality of integrated reports is low, and that more importance is placed on form than content.

Most of the above studies not only confirmed that IR is important to the capital market, but also examined the quality and relevance of IR.

Furthermore, Lee (2016) investigated the relationship between integrated reporting and corporate valuation. Like most other researchers, they used companies listed on the JSE. Their results support the view that the benefits IR brings to the company are greater than its costs. Another valuable finding is that this is truer for companies that have higher organizational complexity. By this they meant large companies, companies with large intangible assets and more than one business segment.

Moloi and Oluwamayowa (2020) worked with a sample of 20 companies listed on the JSE and used their IR for 2013-2017 to examine the quality of IR and its impact on company value. Their results showed that there is a relationship between the quality of IR and firm value, in the way that companies that provide clearer and accurate

information directly increase investor confidence in their company, which increases firm value.

Wahl et al. (2020), who found no significant relationship between corporate value and the quality of IR, argue that voluntary disclosure allows companies to disclose non-financial information only when the benefits exceed the costs, and that companies that have high levels of transparency benefit from low additional costs when they participate in integrated reporting because a large amount of information is already available in their systems. In addition, the authors claimed that these results are negative because they considered voluntary users of IR and that the results would be different if the study were based on mandatory users of IR.

That said, the literature regarding the impact of IR on the cost of capital is scant. We find only a limited support to convey our research with a focus on cost of capital, cost of debt, and cost of equity.

Garcia-Sanchez (2017) found a negative relationship between IR and the cost of capital with their empirical analysis and a sample of 995 companies from 27 different countries. Thus, the study claimed that companies can influence their cost of capital by controlling the availability of their information in the market. This is true not only for financial information, but also for non-financial information. Controlling asymmetric information and publishing integrated reports can reduce not only the current cost of capital, but also the future cost of capital.

Another study of the relationship between integrated reporting and cost of capital conducted by Vena (2020) concluded that companies that apply and publish IR can benefit from a 1.4% lower cost of capital. Since their study was based on cultural dimensions, they found that the power of IR to lower the cost of capital is higher in countries with stronger collectivist values, lower power distance, and higher levels of masculinity. The study included samples from 31 different countries with a total of 211 companies of varying sizes and growth capabilities. The study also found that most of the users were large companies with an average value of 8.90 billion euros.

Research from South Africa by Maama and Marimuthu (2021) also confirmed that there is a negative relationship between the cost of capital and IR and that the results of the

panel data analysis they applied during the research are consistent with the signaling theory, which states that companies that provide information to the market about their value creation send positive signals to the market.

Vitolla (2020) studied the influence that IR has on the cost of equity. They observed how important the quality of the integrated report is for equity. Their sample consisted of 116 international companies belonging to 5 different regions (Africa, Americas, Asia, Europe and Oceania). In their research, the author found that the quality of IR can reduce the cost of equity, and they mention that their research is the first to be conducted on this topic. The study also claimed that publishing IR shows investors that the company is not only focused on financial performance, but also socially and environmentally responsible and able to manage these types of risks, which will attract more long-term investors in the future and possibly reduce the cost of equity.

Another research on the relationship between cost of equity and IR was conducted by Salvi et al. (2020), who found, in a sample of a total of 82 listed companies and 164 included IR from 12 countries and four different regions (Africa, Asia, Europe, and Oceania), that a proper representation of intellectual capital at IR allows companies to reduce the cost of equity. Furthermore, these results are possible due to reduced information asymmetry, which allows investors to make more accurate decisions, ultimately leading to increased confidence and lower cost of equity.

From a different perspective of our research, we found support in the study of Gerwaski (2020), which was one of the first studies to conduct IR on the cost of debt with a particular focus on public debt. Unlike most of the previously mentioned studies, this research was based on a sample of European organizations for the years 2015-2017. Apart from stating that IR can reduce a company's cost of debt, the author extended his research and findings by stating that the aforementioned result is more significant for companies with lower ESG performance and is only relevant for companies operating in an environmentally sensitive industry.

Another research on the impact of IR on the cost of debt was conducted by Muttakin (2020), who confirmed that companies that apply IR have lower cost of debt than companies that do not, using a sample of 847 annual observations for companies listed

on the JSE from 2009 to 2015, because the application of IR helps companies to reduce the cost of information gathering and to reduce monitoring costs. In addition to examining the relationship between borrowing costs and IR, this study also examined the relationship between borrowing costs and financial reporting quality. In this case, it was confirmed that this relationship is stronger for the companies that use IR.

Using a manual content analysis to estimate information quality in IR and a panel regression model to find out the impact of the quality of information disclosed in IR on the cost of debt Raimo et al. (2022), a study with a sample of 133 companies from the EU for the period 2017-2019 concluded that there is a negative relationship between the quality of IR and the cost of debt, which means that companies whose IR have high-quality content may be able to benefit from lower third-party financing costs. This implies that companies whose IR content is of high quality might be able to benefit from lower third-party financing costs. In addition, it can serve as a solution to the objectives of Directive 2014/95/EU, which requires European public interest entities to publish information that is transparent and clearly explains the company's strategy and business model in relation to the environment and society.

Since our research is conducted in Turkey, it is important to include and present previous studies on IR within the borders of Turkey. Currently, there is a very small number of studies and the knowledge about IR in Turkey is still very low. This was pointed out in the study of Ibis and Mizrahitokatli (2020) who investigated IR in small and medium enterprises in Turkey. Their study was descriptive and experimental and included 605 accountants from Turkey who answered their online questionnaire. Overall results showed that 10.3% of all respondents have no knowledge about IR, while 22.2% have very good knowledge and 3.8% have excellent knowledge about it. Moreover, only 26.2% of the surveyed accountants prepare IR, while more than 70% do not. Regarding their opinion about the benefits of IR for transparency, 74.7% of the respondents agree that IR can contribute to transparency and 74.8% of them agree that IR should be practiced in Turkey.

Simsek and Terim (2020) stated in their study that the possibility of comparison between companies does not provide very healthy results due to the lack of standardization of integrated reporting practices in Turkey. Another important factor in

this context is that the independent auditing companies that audit the IR should be trained, which will increase the demand for the report in the future in terms of creating a standard.

Kilic (2018) argued that the basic principle of integrated reporting should be to identify and keep the sustainability performance indicators as high as possible for the risks and opportunities that may arise. From this, it can be seen that sustainability performance has a direct impact on Integrated Reporting.

Karsioglu (2012) articulated that it is believed that there is an inverse relationship between sustainability activities and financial performance. For example, if the harm that companies cause to dependent or independent third parties in the production or consumption of goods, which is called negative externalities, makes them profitable, it creates a negative situation for legal or real persons who value and invest in companies. While the company profits in one place, it loses in another in the same place. The author also stated that contrary to the usual relationship between sustainability and financial profitability, there is a positive relationship between them.

Finally, Arici (2018) in his research with 35 OECD countries comparatively found that Turkey ranked 34th in the average number of reports per company among the countries reporting on sustainability. Sustainability report, like integrated reporting, is published to inform third parties about non-financial data of the company.

4.1.3. HYPOTHESIS DEVELOPMENT

We form our hypotheses under three frameworks: (a) Hypotheses regarding the relationship of IR with WACC, (b) Hypotheses regarding the relationship of IR with COE, and (c) Hypotheses regarding the relationship of IR with COD. All these hypothese are listed below:

(a) Hypotheses regarding the relationship of IR with WACC

H_1: "ESG has a negative relationship with WACC"

H_2: "IR has a negative relationship with WACC"

H_3: "IR has a moderating impact on the ESG-WACC relationship"

H_{1a}: "ENV has a negative relationship with WACC"

H_{3a}: "IR has a moderating impact on the ENV-WACC relationship"

H_{1b}: "SOC has a negative relationship with WACC"

H_{3b}: "IR has a moderating impact on the SOC-WACC relationship"

H_{1c}: "GOV has a negative relationship with WACC"

H_{3c}: "IR has a moderating impact on the GOV-WACC relationship"

(b) Hypotheses regarding the relationship of IR with COE

H_4: "ESG has a negative relationship with COE"

H_5: "IR has a negative relationship with COE"

H_6: "IR has a moderating impact on the ESG-COE relationship"

H_{4a}: "ENV has a negative relationship with COE"

H_{6a}: "IR has a moderating impact on the ENV-COE relationship"

H_{4b}: "SOC has a negative relationship with COE"

H_{6b}: "IR has a moderating impact on the SOC-COE relationship"

H_{4c}: "GOV has a negative relationship with COE"

H_{5c}: "IR has a moderating impact on the GOV-COE relationship"

(c) Hypotheses regarding the relationship of IR with COD.

H_7: "ESG has a negative relationship with COD"

H_8: "IR has a negative relationship with COD"

H_9: "IR has a moderating impact on the ESG-COD relationship"

H_{7a}: "ENV has a negative relationship with COD"

H_{9a}: "IR has a moderating impact on the ENV-COD relationship"

H_{7b}: "SOC has a negative relationship with COD"

H_{9b}: "IR has a moderating impact on the SOC-COD relationship"

H_{7c}: "GOV has a negative relationship with COD"

H_{9c}: "IR has a moderating impact on the GOV-COD relationship"

4.2. EMPIRICAL ANALYSIS

4.2.1. DATA

Our data comprise a sample of total 59 companies listed on BIST and included in the BIST Sustainability Index (XUSRD). We confine ourselves with these companies due to the fact that IR preparing and ESG graded companies are all among the companies included in XUSRD. We show the sample companies and their industry information in Table 2.

As can be seen from Table 2, the majority of our sample companies are engaged in the manufacturing (37,29%) and financial (33,90%) industry. Other companies are from the energy (8,47%), wholesale-retail (6,78%), technology (5,08%), transportation (3,39%), telecommunication (3,39%), and construction (1,69%) businesses.

We obtained secondary data pertaining to these companies from Eikon Refinitiv database, while information regarding Integrated Reports published in Turkey is

compiled from the website of Integrated Reporting Network in Turkey (ERTA). All data have annual frequency.

Sample period is defined as 2015-2020. The starting year is 2015 because of the unavailability of data regarding ESG scores and cost of capital before 2015. Regarding the ending year, in fact, new integrated reports were published in 2021 by a few companies, but since their ESG scores for the year 2021 were not available, we could not include these reports in our analysis.

Table 2: Sample Companies

Company Name	Industry Information							
	Financial	**Manufacturing**	**Construction**	**Wholesale-Retail**	**Transportation**	**Technology**	**Telecommunication**	**Energy**
Yapi ve Kredi Bankasi AS	X							
Aksa Akrilik Kimya Sanayii AS		X						
Cimsa Cimento Sanayi ve Ticaret AS		X						
ENKA Insaat ve Sanayi AS			X					
Anadolu Efes Biracilik ve Malt Sanayii AS		X						
Eregli Demir ve Celik Fabrikalari TAS		X						
Koc Holding AS	X							
Migros Ticaret AS				X				
Ford Otomotiv Sanayi AS		X						
Petkim Petrokimya Holding AS		X						
Turkiye Sinai Kalkinma Bankasi AS	X							
Tofas Turk Otomobil Fabrikasi AS		X						
Turkiye Sise ve Cam Fabrikalari AS	X							
Turkiye Petrol Rafinerileri AS		X						
Turk Hava Yollari AO					X			
Turkiye Garanti Bankasi AS	X							
Aygaz AS		X						
Brisa Bridgestone Sab. Las. San ve Tic AS		X						
Kordsa Teknik Tekstil AS		X						
Haci Omer Sabanci Holding AS	X							
Vestel Elektronik Sanayi ve Ticaret AS		X						
Akbank TAS	X							
Arcelik AS		X						
Aselsan Elektronik Sanayi ve Ticaret AS						X		
Anadolu Anonim Turk Sigorta Sti	X							
Sekerbank TAS	X							
Kerevitas Gida Sanayi ve Ticaret AS		X						
Turkiye Is Bankasi AS	X							
Global Yatirim Holding AS	X							
Netas Telekomunikasyon AS						X		
Otokar Otomotiv ve Savunma Sanayi AS		X						
Tat Gida Sanayi AS		X						
Dogan Sirketler Grubu Holding AS	X							
Kardemir Karabuk De. Cel. San. ve Tic. AS		X						
Turkcell Iletisim Hizmetleri AS							X	
Akenerji Elektrik Uretim AS								X
AG Anadolu Grubu Holding AS	X							
Anadolu Hayat Emeklilik AS	X							
Logo Yazilim Sanayi ve Ticaret AS						X		
Zorlu Enerji Elektrik Uretim AS								X
Ulker Biskuvi Sanayi AS		X						
Turk Traktor ve Ziraat Makineleri AS		X						
Dogus Otomotiv Servis ve Ticaret AS				X				
Coca-Cola Icecek AS		X						
Turkiye Vakiflar Bankasi TAO	X							
Vestel Beyaz Esya Sanayi ve Ticaret AS		X						
TAV Havalimanlari Holding AS	X							
Turkiye Halk Bankasi AS	X							
Albaraka Turk Katilim Bankasi AS	X							
Tekfen Holding AS	X							
Turk Telekomunikasyon AS							X	
Aksa Enerji Uretim AS								X
Pegasus Hava Tasimaciligi AS					X			
Anel Elektrik Proje Taahhut ve Ticaret AS								X
Bizim Toptan Satis Magazalari AS				X				
Enerjisa Enerji AS								X
Polisan Holding AS	X							
Sok Marketler Ticaret AS				X				
Iskenderun Demir ve Celik AS		X						
TOTAL (59)	**20**	**22**	**1**	**4**	**2**	**3**	**2**	**5**

Variables under concern are described in Table 3 as follows:

Table 3:Variable Description and Sources

Variable	Symbol	Source
Dependent		
Weighted average cost of capital (%)	*WACC*	
Cost of equity (%)	*COE*	Eikon
Cost of debt (%)	*COD*	
Independent		
ESG score (grade)	*ESG*	Eikon
Environment pillar score (grade)	*ENV*	Eikon
Social pillar score (grade)	*SOC*	Eikon
Governance pillar score (grade)	*GOV*	Eikon
Integrated report (1 if a IR is published; 0 otherwise)	*IR*	ERTA
Total assets (TL)	*TA*	Eikon
Total debt (ratio)	*LEV*	Eikon
Price-to-book ratio (ratio)	*PB*	Eikon

Eikon defines the weighted average cost of capital (WACC) as a financial metric used to calculate a firm's cost of capital in which each category of capital is proportionately weighted. All sources of capital including equity stock, preferred stock and debt are included in the calculation. Cost of equity (COE) is the return a firm theoretically pays its equity investors. Eikon calculates COE by multiplying equity risk premium of the market with the beta of the stock plus an inflation adjusted risk free rate. Equity risk premium is expected market return minus inflation adjusted risk free rate. Our final dependent variable is the cost of debt which represents the marginal cost to the company of issuing new debt now. It is calculated by Eikon by adding weighted cost of short term debt and weighted cost of long term debt based on the 1-year and 10-year points of an appropriate credit curve.

ESG score (ESG) is the Refinitiv ESG Score which is an overall company score based on the self-reported information in the environmental, social and corporate governance pillars. Environmental pillar score (ENV) is a component of ESG score and it measures a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems. It reflects how well a company uses best management practices to avoid environmental risks and capitalize on environmental opportunities in order to generate long term shareholder value. Social pillar score (SOC) measures a company's capacity to generate trust and loyalty with its workforce,

customers and society, through its use of best management practices. It is a reflection of the company's reputation and the health of its license to operate, which are key factors in determining its ability to generate long term shareholder value. The Corporate governance pillar (GOV) measures a company's systems and processes, which ensure that its board members and executives act in the best interests of its long term shareholders. It reflects a company's capacity, through its use of best management practices, to direct and control its rights and responsibilities through the creation of incentives, as well as checks and balances in order to generate long term shareholder value.

Integrated report (IR) is a dummy variable. It is 1 when the company published IR at a given year, 0 otherwise. IR preparer companies are displayed in Table 4.

Table 4:IR Preparer Firms

IR Preparer	2017	2018	2019	2020
Yapi ve Kredi Bankasi AS			X	X
Aksa Akrilik Kimya Sanayii AS			X	X
Cimsa Cimento Sanayi ve Ticaret AS				X
Eregli Demir ve Celik Fabrikalari TAS				X
Turkiye Sinai Kalkinma Bankasi AS		X	X	X
Turkiye Garanti Bankasi AS	X	X	X	X
Akbank TAS				X
Turkiye Is Bankasi AS		X	X	X
Turkcell Iletisim Hizmetleri AS				X
Coca-Cola Icecek AS				X
Turkiye Vakiflar Bankasi TAO			X	X
Turkiye Halk Bankasi AS				X
Iskenderun Demir ve Celik AS				X

We have three control variables: total assets, total debt, and price-to-book ratio. Total assets represents the size of a company. Total debt proxies firm leverage. It is a combination of both short-term and long-term debt. Short-term debts are those that must be paid back within a year. Long-term debt generally includes every liability that must be paid off in more than a year. Price-to Book per share is calculated by dividing the company’s latest closing Price by its Book Value per share. Book Value per share is calculated by dividing Total Equity from latest fiscal period by Current Total Shares Outstanding. Total debt is scaled by total assets.

We take the natural logarithm of ESG scores (ESG) and the scores of each of its pillars (ENV, SOC, and GOV) and total assets (TA) to normalize the data and control for potential heteroscedasticity issues.

Table 5:Descriptive Statistics

Variable	Obs.	Mean	Median	Std. Dev.	Min.	Max.
WACC	223	0,087	0,086	0,023	0,035	0,154
COE	223	0.139	0,138	0,029	0,078	0,210
COD	223	0,032	0,030	0,014	0,006	0,074
ESG	223	59,331	61,750	15,237	17,380	93,950
ENV	223	59,399	61,790	21,313	0,000	97,440
SOC	223	65,247	67,840	19,588	14,070	97,320
GOV	223	52,402	51,370	19,635	11,500	94,370
TA (billions TL)	223	19,654	2,654	26,394	0,243	118,737
LEV	223	0,313	0,307	0,175	0,000	0,903
PB	221	2,982	1,210	16,631	0,230	245,400

4.2.2. METHODOLOGY

Our methodology is two-fold both of which are employed using STATA 13 statistial package.

At the first step, we make comparisons between companies that prepare IR and that do not prepare in terms of their ESG scores and cost of capital. This is done by measuring the absolute difference between the mean value in these two different groups of firms.

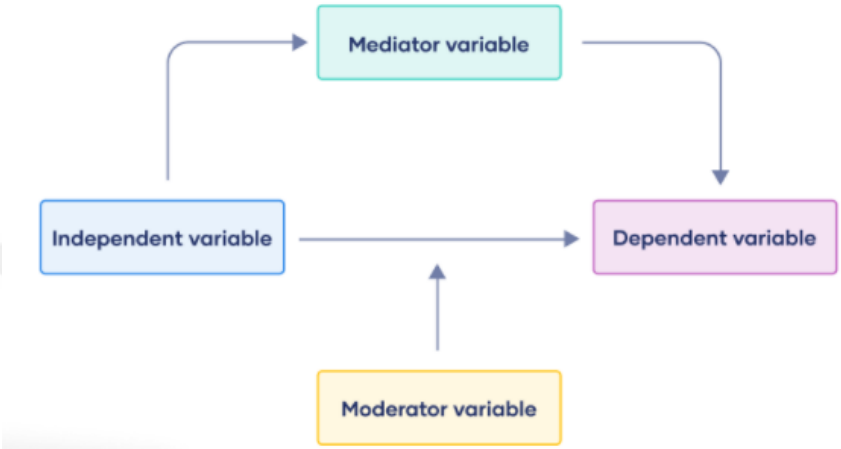
At the second step, we employ panel data analysis in order to uncover the impact of IR on cost of capital. Our baseline empirical model equation, which is specified to test for H_1, H_2, and H_3 is as follows:

$$WACC_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 IR_{it} + \beta_3 ESGxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (1)$$

where WACC is the weighted average cost of capital, ESG is the ESG score, IR is a dummy variable of 1 when IR is prepared, and CONTROL is a vector of control variables including total assets, total debt, and price-to-book ratio. The interaction term

of $ESGxIR_{it}$ is introduced in the model specification in order to capture a possible moderating affect of IR on the relationship between ESG and WACC. In other words, our model measures the direct impact of IR on WACC by β_2 and the indirect impact by β_3. The moderating impact is represented in Figure 11:

Figure 10: Mediator and Moderator variables



Source: https://www.scribbr.com/methodology/mediator-vs-moderator/

From Figure 11, we can see that mediator variable presents way in which independent variable can impact dependent variables. Moreover, mediator variable is a key of relationship between independent and dependent variables. On the other hand, moderating variable is influencing already existing relationship between independent and dependent variables. This means that moderating role of a variable can influence the direction and the extent of relationship between independent and dependent variables.

To avoid potentially problematic high multicollinearity with the interaction term and to improve the intertpretation of results, the variables that enter into interaction were mean-centered (Iacobucci, 2017).

We re-run Eq. (1) by replacing WACC with COE to test for H_4, H_5, and H_6 and with COD to test for H_7, H_8, and H_9. We also replace ESG with ENV, SOC, and GOV pillars in order to obtain more information regarding the relationship between ESG, IR, and the cost of capital. The following series of equations show these variations in our baseline Eq. (1):

$$COE_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 IR_{it} + \beta_3 ESGxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (2)$$

$$COD_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 IR_{it} + \beta_3 ESGxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (3)$$

$$WACC_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 IR_{it} + \beta_3 ENVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (4)$$

$$WACC_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 IR_{it} + \beta_3 SOCxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (5)$$

$$WACC_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 IR_{it} + \beta_3 GOVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (6)$$

$$COE_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 IR_{it} + \beta_3 ENVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (7)$$

$$COE_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 IR_{it} + \beta_3 SOCxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (8)$$

$$COE_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 IR_{it} + \beta_3 GOVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (9)$$

$$COD_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 IR_{it} + \beta_3 ENVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (10)$$

$$COD_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 IR_{it} + \beta_3 SOCxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (11)$$

$$COD_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 IR_{it} + \beta_3 GOVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it} \quad (12)$$

Table 6 shows the link between all of the equations above with their corresponding hypothesis.

Table 6:Descriptive Statistics

Equation	Hypothesis	
	Notation	**Statement**
1	H_1	ESG has a negative relationship with WACC
	H_2	IR has a negative relationship with WACC
	H_3	IR has a moderating impact on the ESG-WACC relationship
2	H_4	ESG has a negative relationship with COE
	H_5	IR has a negative relationship with COE
	H_6	IR has a moderating impact on the ESG-COE relationship
3	H_7	ESG has a negative relationship with COD
	H_8	IR has a negative relationship with COD
	H_9	IR has a moderating impact on the ESG-COD relationship
4	H_{1a}	ENV has a negative relationship with WACC
	H_{3a}	IR has a moderating impact on the ENV-WACC relationship
5	H_{1b}	SOC has a negative relationship with WACC
	H_{3b}	IR has a moderating impact on the SOC-WACC relationship
6	H_{1c}	GOV has a negative relationship with WACC
	H_{3c}	IR has a moderating impact on the GOV-WACC relationship
7	H_{4a}	ENV has a negative relationship with COE
	H_{6a}	IR has a moderating impact on the ENV-COE relationship
8	H_{4b}	SOC has a negative relationship with COE
	H_{6b}	IR has a moderating impact on the SOC-COE relationship
9	H_{4c}	GOV has a negative relationship with COE
	H_{6c}	IR has a moderating impact on the GOV-COE relationship
10	H_{7a}	ENV has a negative relationship with COD
	H_{9a}	IR has a moderating impact on the ENV-COD relationship
11	H_{7b}	SOC has a negative relationship with COD
	H_{9b}	IR has a moderating impact on the SOC-COD relationship
12	H_{7c}	GOV has a negative relationship with COD
	H_{9c}	IR has a moderating impact on the GOV-COD relationship

Our panel data set is unbalanced and short. It is unbalanced since we have missing data for a few number of companies during the sample period. In other words, each entity in our data set has different numbers of observations. Some cells in a contingency table (or cross-table) of cross-sectional and time-series variables have zero frequency. Accordingly, the total number of observations is not nT in our setting. It is short because we have many (59) entities (large n) but few (6) time periods (small T) (Cameron, 2009). Accordingly, our data set is wide in width (cross-sectional) and short in length (time-series). We estimate both fixed and random effects in our models and use the Hausman specification test to compare them under the null hypothesis that individual effects are uncorrelated with any regressor in the model (Hausman, 1978)The Hausman test examines if "the random effects estimate is insignificantly different from

the unbiased fixed effect estimate" (Kennedy, 2008). If the null hypothesis of no correlation is rejected, we should go for a fixed effect model rather than the random effect counterpart.

4.2.3. UNIVARIATE TEST RESULTS

First, we compare the group of firms that prepare IR with their non-preparing counterparts. Table 7 demonstrates the differences in means of these two groups in terms of ESG scores.

Table 7:Mean Difference Test for the ESG Scores of IR Preparers and Non-Preparers.

Variable	Obs.	Mean	Std. Err.	t-test	p-value
ESG_{NIR}	200	58,476	1,082		
ESG_{IR}	23	66,764	2,626		
Diff.		-8,288	2,841	-2,918***	0,000

Note: *** denotes 1% significance level.

As Table 7 suggests, the overall ESG scores of non-preparers of IR are significantly lower than the IR preparer companies. This is also the case almost for every ESG component as indicated in Table 8.

Table 8:Mean Difference Test for the Components of ESG Scores of IR Preparers and Non-Preparers.

Variable	Obs.	Mean	Std. Err.	t-test	p-value
ENV_{NIR}	200	58,425	1,501		
ENV_{IR}	23	67,863	4,295		
Diff.		-9,438	4,550	-2,074**	0,024
SOC_{NIR}	200	64,019	1,396		
SOC_{IR}	23	75,920	3,053		
Diff.		-11,901	3,357	-3,545***	0,000
GOV_{NIR}	200	52,123	1,410		
GOV_{IR}	23	54,831	3,531		
Diff.		-2,708	3,802	-0,712	0,241

Note: Subscripts NIR and IR stand for non-preparers and preparers of IR. *** and ** denote 1% and 5% significance levels, respectively.

According to Table 8, the Environment and Social scores are significantly higher for IR preparers than those of the non-preparers. Particularly, the differences between the scores regarding the Social component of ESG are the highest. However, although the

Governance score is higher again for the IR preparing companies, the mean difference is statistically insignificant.

On the other hand, these results are based on firm-year observations, meaning that a firm may appear in the observations more than once during the sample period. In this regard, we perform the difference tests for the same group of IR companies, which have been non-preparers before, by averaging their variable of interest. The results are reported in Table 9.

Table 9:Mean Difference Test for all ESG Scores of the Same IR Preparers and Non-Preparers.

Variable	Obs.	Mean	Std. Err.	t-test	p-value
ESG_{NIR}	10	58,542	3,946		
ESG_{IR}	10	67,770	3,187		
Diff.		-9,229	5,073	-1,819**	0,042
ENV_{NIR}	10	66,590	5,708		
ENV_{IR}	10	69,157	5,442		
Diff.		-2,567	7,887	-0,325	0,374
SOC_{NIR}	10	66,849	4,857		
SOC_{IR}	10	78,513	4,360		
Diff.		-11,664	6,527	-1,787**	0,045
GOV_{NIR}	10	46,107	6,091		
GOV_{IR}	10	51,711	4,465		
Diff.		-5,604	7,552	-0,742	0,234

Note: Subscripts NIR and IR stand for non-preparers and preparers of IR. ** denotes 5% significance level.

These results indicate that the ESG scores are significantly higher when firms become IR preparers in due course. However, it would also be reasonable to argue that ESG scores may be higher for the IR preparing firms just because IR practice is started to be applied at a time when firms have already made considerable progress in their process of learning about how to improve their ESG scores in the following years. Thus, the increase in the ESG scores may not be associated with IR.

Second, we make a similar comparison between preparers and non-preparers of IR in terms of their cost of capital. We provide the results in Table 10.

Table 10:Mean Difference Test for the WACC of IR Preparers and Non-Preparers.

Variable	Obs.	Mean	Std. Err.	t-test	p-value
$WACC_{NIR}$	200	0,088	0,002		
$WACC_{IR}$	23	0,078	0,004		
Diff.		0,009	0,004	2,292**	0,014

Note: ** denotes 5% significance level.

Table 10 indicates that, WACC of non-preparers of IR are significantly higher than the IR preparers. Table 11 below demonstrates the comparison findings regarding the cost of equity and cost of debt.

Table 11:Mean Difference Test for the COE and COD of IR Preparers and Non-Preparers.

Variable	Obs.	Mean	Std. Err.	t-test	p-value
COE_{NIR}	200	0,138	0,002		
COE_{IR}	23	0,156	0,005		
Diff.		-0,018	0,005	-3,345***	0,001
COD_{NIR}	200	0,031	0,001		
COD_{IR}	23	0,037	0,004		
Diff.		-0,006	0,004	-1,568*	0,065

Note: Subscripts NIR and IR stand for non-preparers and preparers of IR. *** and * denote 1% and 10% significance levels, respectively.

Interestingly, both the cost of equity and the cost of debt of the IR preparing companies are significantly higher when compared to their non-preparing counterparts. These results appear to be in contradiction with the WACC results, however, this can be due to differing weights of equity and debt utilized as the capital structure policy, which would eventually be affecting the overall WACC figures of the firms.

We, finally, consider the same group of companies that were non-preparers before. The results are portrayed in Table 12.

Table 12:Mean Difference Test for WACC, COE, and COD of the Same IR Preparers and Non-Preparers.

Variable	Obs.	Mean	Std. Err.	t-test	p-value
$WACC_{NIR}$	10	0,079	0,006		
$WACC_{IR}$	10	0,079	0,004		
Diff.		0,000	0,007	0,037	0,514
COE_{NIR}	10	0,141	0,005		
COE_{IR}	10	0,152	0,006		
Diff.		-0,011	0,007	-1,454*	0,008
COD_{NIR}	10	0,037	0,002		
COD_{IR}	10	0,033	0,005		
Diff.		0,004	0,005	0,725	0,759

Note: Subscripts NIR and IR stand for non-preparers and preparers of IR. * denotes 10% significance level.

Table 12 indicates that the cost of capital, cost of equity, and cost of debt do not significantly differ for companies which became IR preparers in time. Even the cost of equity for these companies increases as the companies start to prepare IR.

For this reason, panel data analysis is required in order to reveal the association between IR and cost of capital along with the ESG scores in a more robust manner.

4.2.4. PANEL DATA TEST RESULTS

We present the results of our panel data analyses in a step-by-step manner in which we add the variables of interest at each step. Accordingly, Step 1 looks at the relationship between cost of capital and the scores of ESG and its individual pillars only. Then, at Step 2 we insert IR as the other independent variable to reveal the direct impact of integrated reporting on cost of capital. At Step 3, the interaction variables are included to test for the moderating affect of IR. Eventually at Step 4, the results of the full models stated in the relevant equations are displayed.

The relationship between IR and WACC

In this regard, we first provide the results of Eq. (1) in Table 13.

Table 13:Impact of IR on WACC (ESG)

Eq. (13): $WACC_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 IR_{it} + \beta_3 ESGxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$

Dep. Var. WACC	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
ESG	0,066*	0,007**	0,007*	0,007*
	(0,033)	(0,003)	(0,003)	(0,004)
IR		0,040*	0,007**	0,004
		(0,002)	(0,003)	(0,003)
ESG*IR			-0,015*	-0,023**
			(0,008)	(0,009)
Control Var.				
PB				0,001
				(0,001)
LEV				-0,045**
				(0,022)
TA				-0,011
				(0,010)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	10,120*	12,970**	13,570*	16,810*
R sq.	0,188	0,171	0,170	0,511
F	44,440***	37,320***	33,560***	33,680***

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

From Table 13 above, we can understand that independent variables ESG and IR observed separately are having significantly positive relationship with WACC in almost all steps. Step 1 results imply that as ESG score increases by 1%, WACC increases by 0,066%. This relationship still holds when we add IR into the model in Step 2 and interestingly IR has a positive impact on WACC either. In fact, it seems that the WACC of IR preparers is 0,04% higher than non-preparer firms. What is more interesting is that the interaction variable, $ESGxIR_{it}$, has a significantly negative coefficient in Step 3 and Step 4. These results show that IR has a moderating impact on the significantly positive relationship between ESG scores and WACC. This moderating effect is an antagonistic one in the sense that it reverses the impact of the ESG on WACC. Our interpretation is that, if a company is an IR preparer, it is likely that increases in its ESG scores would be associated with a lower WACC when compared to its non-preparer counterparts.

When the full model in Step 4 is considered, Eq. (1) has an R square of 51% meaning that 51% of the variance of the WACC can be explained by the variance of independent variables. Note that the Hausman test points that our panel estimation should be based on a fixed-effects regression.

In line with these findings, we reject the H_1 and H_2 because both ESG and IR does not have a negative relationship with WACC. However, we cannot reject H_3 due to the fact that the interaction variable $ESGxIR_{it}$ has a significant impact on the relationship between ESG and WACC. Regarding the control variables, only total debt has a significant influence on WACC, indicating that more leverage decreases the cost of capital, probably because of the tax shield impact of debt.

Following this, we explore the relationship with respect to each ESG pillar. Table 14 presents the results considering the environment pillar in Eq. (4).

Table 14: Impact of IR on WACC (Environment Pillar)

Eq. (14): $WACC_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 IR_{it} + \beta_3 ENVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. WACC	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
ENV	0,002**	0,002**	0,002**	0,003***
	(0,001)	(0,001)	(0,001)	(0,001)
IR		0,005*	0,006**	0,003
		(0,003)	(0,003)	(0,003)
ENV*IR			-0,005	-0,008
			(0,004)	(0,006)
Control Var.				
PB				0,001
				(0,001)
LEV				-0,046**
				(0,022)
TA				-0,012
				(0,010)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	11,940*	14,870**	14,680*	15,820
R sq.	0,196	0,176	0,177	0,509
F	47,220***	39,640***	43,410***	34,880***

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

As it is clear, the results of Eq. (4) are very similar to those of Eq. (1). Environment pillar seems to be positively associated with WACC just like the ESG scores as a whole.

IR has also a significantly positive impact on WACC. However, we can see that the negative coefficient of the interaction variable $ENVxIR_{it}$ is not significant in this model. Hence, the moderating impact of integrated reporting does not exist on the relationship between environment scores and WACC.

Once again, about 51% of the variance of the WACC can be explained by the variance of independent variables. For the full model in Eq. (4), Hausman test requires us to estimate random-effects panel regression. But since the results are qualitatively similar, we opt to report fixed-effects results for consistency. Total debt is the only control variable that has a significant influence on WACC.

In sum, we reject the H_{1a} because ENV does not have a negative relationship with WACC. We also reject H_{3a} since the interaction variable $ENVxIR_{it}$ has no significant impact on the relationship between ENV and WACC.

Then, we apply our analysis for the social pillar of ESG. The results are provided in Table 15. Although the Hausman test requires the random-effects estimation, we report the results of fixed-effects regression for consistency.

Table 15: Impact of IR on WACC (Social Pillar)

Eq. (15): $WACC_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 IR_{it} + \beta_3 SOCxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$

Dep. Var. WACC	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
SOC	0,005*	0,005*	0,005*	0,005
	(0,003)	(0,003)	(0,003)	(0,003)
IR		0,004*	0,005**	0,003
		(0,003)	(0,002)	(0,003)
SOC*IR			-0,004	-0,009
			(0,005)	(0,008)
Control Var.				
PB				0,001
				(0,001)
LEV				-0,046**
				(0,023)
TA				-0,011
				(0,010)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	10,090*	12,840**	12,790*	13,840
R sq.	0,183	0,165	0,165	0,519
F	43,360***	36,440***	32,040***	34,930***

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

Table 15 indicates similar findings in terms of the relationship between WACC and IR as well as SOC particularly in Step 1, 2, and 3. However, when the full model in Eq. (5) is considered, we see that the coefficients have the same signs but their significance disappears. This may be because the relationship between WACC and the social pillar of ESG is already weak as implied by the low R squares in Step 1, 2, and 3. So, even the R square is improved to 52% in Step 4, control variables appear to neutralize the impact of SOC on WACC. Thus, IR does not have a moderating impact on their relationship either.

Accordingly, we reject the H_{1b} because SOC does not have a negative relationship with WACC. We also reject H_{3b} since the interaction variable $SOCxIR_{it}$ has no significant impact on the relationship between SOC and WACC.

Finally, we intend to reveal the relationship between WACC and the governance pillar of ESG. The results are presented in Table 16.

Table 16: Impact of IR on WACC (Governance Pillar)

Eq. (16): $WACC_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 IR_{it} + \beta_3 GOVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$

Dep. Var. WACC	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
GOV	0,002	0,002	0,002	0,002
	(0,003)	(0,003)	(0,003)	(0,003)
IR		0,004	0,004*	0,000
		(0,003)	(0,002)	(0,003)
GOV*IR			-0,010***	-0,012***
			(0,003)	(0,004)
Control Var.				
PB				0,001
				(0,001)
LEV				-0,043*
				(0,022)
TA				-0,012
				(0,010)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	10,090*	13,100**	15,930**	25,220***
R sq.	0,220	0,203	0,204	0,496
F	44,980***	37,800***	40,260***	37,510***

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

In Table 16, we see that the relationship between the governance pillar and WACC is not statistically significant in any step. However, IR preparing companies appear to have higher WACC as Step 3 analysis suggests. The most interesting finding in Step 3 and Step 4 is that the coefficient of the interaction variable, $GOVxIR_{it}$, is significantly negative. Since the main effect of GOV on WACC is insignificant, we cannot talk about a moderating impact of IR on their relationship. But it is plausible to assert that statistically significant and negative coefficient of the interaction term is showing that governance score decreases WACC only for IR preparing companies.

These results lead us to reject the H_{1c} because GOV does not have a negative relationship with WACC. We also reject H_{3c} since the main effect of GOV on WACC is not significant which nullifies a possible moderating effect of IR.

The relationship between IR and COE

We follow the same approach in presenting the results for the relationship between IR and COE. We provide the results of Eq. (2) in Table 17.

Table 17: Impact of IR on COE (ESG)

Eq. (17): $COE_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 IR_{it} + \beta_3 ESGxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. COE	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
ESG	-0,001	-0,001	-0,001	-0,001
	(0,007)	(0,007)	(0,007)	(0,007)
IR		0,000	0,002	0,002
		(0,003)	(0,005)	(0,005)
ESG*IR			-0,013	-0,015
			(0,021)	(0,021)
Control Var.				
PB				-0,001
				(0,000)
LEV				-0,010
				(0,017)
TA				-0,003
				(0,005)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	4,610	5,980	8,460	20,690**
R sq.	0,542	0,541	0,537	0,456
F	175,550***	153,670***	128,870***	101,550***

Note: *** and ** denote 1% and 5% significance levels, respectively.

Even though the Hausman test implies random-effects in Step 1, Step 2, and Step 3, we provide the fixed-effects result since the results are very similar and, on top of that, we design the table in consistence with the results of the full model of Eq. (2) in Step 4 which is based on a fixed-effects panel analysis.

What Table 17 simply suggests is that none of the variable of interest is statistically significant. For that reason, we reject H_4, H_5 and H_6. But note that the coefficient of ESG is negative, which implies a decrease in COE as ESG increases.

Then we start to explore the impact on COE with respect to each ESG pillar. Tables 18, 19 and 20 presents the results considering the environment, social and governance pillars in Eq. (7), Eq. (8), and Eq. (9), respectively.

Table 18: Impact of IR on COE (Environment Pillar)

Eq. (18): $COE_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 IR_{it} + \beta_3 ENVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$

Dep. Var. COE	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
ENV	-0,001	-0,001	-0,001	-0,001
	(0,002)	(0,000)	(0,000)	(0,002)
IR		-0,001	-0,001	-0,001
		(0,003)	(0,005)	(0,005)
ENV*IR			0,001	0,000
			(0,014)	(0,014)
Control Var.				
PB				-0,001
				(0,000)
LEV				-0,009
				(0,017)
TA				-0,002
				(0,005)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	7,300	8,570	12,370	21,510**
R sq.	0,538	0,536	0,537	0,481
F	170,400***	148,060***	131,030***	103,340***

Note: *** and ** denote 1% and 5% significance levels, respectively.

Table 19: Impact of IR on COE (Social Pillar)

Eq. (19): $COE_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 IR_{it} + \beta_3 SOCxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. COE	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
SOC	-0,003	-0,003	-0,003	-0,003
	(0,005)	(0,005)	(0,005)	(0,005)
IR		-0,000	0,003	0,003
		(0,003)	(0,005)	(0,005)
SOC*IR			-0,014	-0,017
			(0,016)	(0,017)
Control Var.				
PE				-0,001
				(0,000)
LEV				-0,012
				(0,017)
TA				-0,002
				(0,006)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	4,800	6,130	12,400*	29,230***
R sq.	0,534	0,534	0,528	0,470
F	182,920***	159,020***	131,470***	105,020***

Note: *** and * denote 1% and 10% significance levels, respectively.

Table 20: Impact of IR on COE (Governance Pillar)

Eq. (20): $COE_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 IR_{it} + \beta_3 GOVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. COE	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
GOV	0,002	0,002	0,002	0,002
	(0,003)	(0,003)	(0,003)	(0,003)
IR		-0,000	-0,000	-0,001
		(0,003)	(0,003)	(0,004)
GOV*IR			-0,002	-0,002
			(0,010)	(0,010)
Control Var.				
PB				-0,001
				(0,000)
LEV				-0,007
				(0,017)
TA				-0,002
				(0,006)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	4,520	5,950	6,380	20,150**
R sq.	0,539	0,538	0,538	0,467
F	213,400***	182,180***	170,150***	142,490***

Note: *** and ** denote 1% and 5% significance levels, respectively

Table 18, 19 and 20 indicate almost the same results of no relationship between the variables. But we observe that not only the coefficient of ESG pillars but also the IR coefficient is negative, which echoes a potential decrease in COE as the IR practice in firms improves.

On the other hand, due to the insignficant findings, we should reject H_{4a}, H_{4b}, H_{4c}, H_{6a}, H_{6b} and H_c.

The relationship between IR and COD

Our final attempt is to search for the relationship between IR and COD. We provide the results of Eq. (21) in Table 21.

Table 21: Impact of IR on COD (ESG)

Eq. (22): $COD_{it} = \alpha + \beta_1 ESG_{it} + \beta_2 IR_{it} + \beta_3 ESGxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. COD	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
ESG	-0,010**	-0,009**	-0,009**	-0,009**
	(0,004)	(0,004)	(0,004)	(0,004)
IR		0,006**	0,010***	0,011***
		(0,003)	(0,004)	(0,003)
ESG*IR			-0,025*	-0,021
			(0,015)	(0,014)
Control Var.				
PB				-0,001***
				(0,000)
LEV				0,034**
				(0,016)
TA				-0,001
				(0,006)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	11,070**	9,720	14,350**	13,390
R sq.	0,237	0,287	0,264	0,271
F	31,260***	27, 020***	22,540***	24,640***

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

On the contrary of the previous results that belong to the model with COE as the dependent variable, Table 21 reports significant findings. First, the most prominent outcome is that there is a significant negative relationship between ESG and COD, which holds in every step. Moreover, IR has a significant positive impact on COD just like the case with WACC. At Step 3, we identify a significant negative coefficient for

the interaction variable, $ESGxIR_{it}$, that implies a moderating impact of IR on the relationship between ESG and COD. However, this impact dies out in Step 4 where the full model of Eq. (3) is considered. Among the control variables, price-to-book and total debt are significant. Not surprisingly, an increase in total debt is associated with an increase in cost of debt, while the negative coefficient of PB suggests that low PB companies are the ones that face severe distress translating into higher cost of debt.

Regarding our hypotheses, we cannot reject H_7 because ESG in all cases shows negative relationship with COD. We reject H_8 due to the fact that IR has a positive relationship with COD. On the other hand, we have some evidence for the moderating effect of IR on the relationship between ESG and COD, so we do not reject H_9**.**

Afterwards, we look for the case for the ESG pillars set in Eq. (10), Eq. (11), and Eq. (12). First, we examine the relatioship between the environment pillar and cost of debt. Table 22 provides the results.

Table 22: Impact of IR on COD (Environment Pillar)

Eq. (23): $COD_{it} = \alpha + \beta_1 ENV_{it} + \beta_2 IR_{it} + \beta_3 ENVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. COD	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
ENV	-0,001	-0,001	-0,001	-0,001
	(0,002)	(0,002)	(0,002)	(0,002)
IR		0,006*	0,007*	0,009**
		(0,003)	(0,004)	(0,004)
ENV*IR			-0,006	-0,004
			(0,011)	(0,010)
Control Var.				
PB				-0,001***
				(0,000)
LEV				-0,038**
				(0,017)
TA				-0,000
				(0,006)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	8,430	7,110	12,280	11,370
R sq.	0,272	0,321	0,306	0,322
F	31,120***	27,170***	23,650***	28,800***

Note: ***, **, and * denote 1%, 5%, and 10% significance levels, respectively.

Table 22 indicates that the only significant relationship is between the IR and COD. Accordingly, IR preparer firms appear to have more cost of debt. Environmental pillar has a negative coefficient, but since it is insignificant, we reject $H7_a$. We also reject H_{9a} because there is no signs of moderating impact of IR on the relationship between ENV and COD. Note that the Hausman test requires us to employ random-effects model, but we provide the fixed-effects results which are by and large similar for comparison purposes.

Next, we analyze the relationship between the social pillar and COD. The results are portrayed in Table 23.

Table 23: Impact of IR on COD (Social Pillar)

Eq. (24): $COD_{it} = \alpha + \beta_1 SOC_{it} + \beta_2 IR_{it} + \beta_3 SOCxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$				
Dep. Var. COD	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
SOC	-0,010**	-0,009**	-0,009**	-0,009**
	(0,004)	(0,004)	(0,004)	(0,004)
IR		0,006**	0,010***	0,011***
		(0,003)	(0,003)	(0,003)
SOC*IR			-0,019	-0,013*
			(0,011)	(0,009)
Control Var.				
PE				-0,001***
				(0,000)
LEV				0,035**
				(0,016)
TA				-0,000
				(0,006)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	12,640**	10,950*	12,260*	12,80
R sq.	0,210	0,259	0,249	0,284
F	29,520***	25,450***	22,180***	24,150***

Note: *** and * denote 1% and 10% significance levels, respectively.

The results in Table 23 shows significant findings. We can argue that the social pillar has a greater influence on cost of debt. The coefficient of SOC is negative indicating that as the social score improves, the cost of debt declines. This leads us not to reject H_{7b}. IR is again significantly positive. What is more is that the full model of Eq. (11) in

Step 4 shows that IR has a moderating impact on the relationship between SOC and COD. Therefore, we cannot reject H_{9b}.

As the last analysis, we examine the governance pillar and its association with cost of debt. Table 24 gives the results.

Table 24: Impact of IR on COD (Governance Pillar)

Eq. (25): $COD_{it} = \alpha + \beta_1 GOV_{it} + \beta_2 IR_{it} + \beta_3 GOVxIR_{it} + \beta_4 CONTROL_{it} + \varepsilon_{it}$

Dep. Var. COD	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Ind. Var.	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**	**Coef. (std.err.)**
GOV	0,000	-0,000	0,001	0,002
	(0,003)	(0,003)	(0,004)	(0,004)
IR		0,006**	0,006**	0,008***
		(0,003)	(0,003)	(0,003)
GOV*IR			-0,010**	-0,011**
			(0,005)	(0,005)
Control Var.				
PB				-0,001***
				(0,000)
LEV				0,040**
				(0,016)
TA				-0,002
				(0,006)
Year fixed-effects	Yes	Yes	Yes	Yes
Hausman Test	4,520	5,950	6,380	20,150**
R sq.	0,282	0,330	0,321	0,224
F	30,560***	26,470***	22,36***	25,890***

Note: *** and ** denote 1% and 5% significance levels, respectively

As Table 24 suggests, the relationship between GOV and COD is weak. Thus, we reject H_{7c}. IR is positively significant as usual. However, in Step 3 and Step 4, we identify a significantly negative coefficient for the interaction variable, $GOVxIR_{it}$. This variable does not have a moderating impact on the relationship between GOV and COD and we reject H_{9c}, but we can comfortably mention that governance score decreases COD only for IR preparing companies, which is a similar conclusion considering the WACC-GOV nexus.

4.2.5. DISCUSSION

The results we outline in the previous section are summarized along with the relevant hypothesis in Table 25.

Table 25: Summary of Findings

Hypothesis			
Notation	**Statement**	**Result**	**Relationship**
Panel A: The relationship between IR and WACC			
H_1	ESG has a negative relationship with WACC	Rejection	Significant (+)
H_{1a}	ENV has a negative relationship with WACC	Rejection	Significant (+)
H_{1b}	SOC has a negative relationship with WACC	Rejection	Significant (+)
H_{1c}	GOV has a negative relationship with WACC	Rejection	Significant (+)
H_2	IR has a negative relationship with WACC	Rejection	Significant (+)
H_3	IR has a moderating impact on the ESG-WACC relationship	No Rejection	Moderation (-)
H_{3a}	IR has a moderating impact on the ENV-WACC relationship	Rejection	No Moderation (-)
H_{3b}	IR has a moderating impact on the SOC-WACC relationship	Rejection	No Moderation (-)
H_{3c}	IR has a moderating impact on the GOV-WACC relationship	Rejection	No Moderation (-)
Panel B: The relationship between IR and COE			
H_4	ESG has a negative relationship with COE	Rejection	Insignificant (-)
H_{4a}	ENV has a negative relationship with COE	Rejection	Insignificant (-)
H_{4b}	SOC has a negative relationship with COE	Rejection	Insignificant (-)
H_{4c}	GOV has a negative relationship with COE	Rejection	Insignificant (+)
H_5	IR has a negative relationship with COE	Rejection	Insignificant (+,-)
H_6	IR has a moderating impact on the ESG-COE relationship	Rejection	No Moderation (-)
H_{6a}	IR has a moderating impact on the ENV-COE relationship	Rejection	No Moderation (+)
H_{6b}	IR has a moderating impact on the SOC-COE relationship	Rejection	No Moderation (-)
H_{6c}	IR has a moderating impact on the GOV-COE relationship	Rejection	No Moderation (-)
Panel C: The relationship between IR and COD			
H_7	ESG has a negative relationship with COD	No Rejection	Significant (-)
H_{7a}	ENV has a negative relationship with COD	Rejection	Insignificant (-)
H_{7b}	SOC has a negative relationship with COD	No Rejection	Significant (-)
H_{7c}	GOV has a negative relationship with COD	Rejection	Insignificant (+)
H_8	IR has a negative relationship with COD	Rejection	Significant (+)
H_9	IR has a moderating impact on the ESG-COD relationship	No Rejection	Moderation (-)
H_{9a}	IR has a moderating impact on the ENV-COD relationship	Rejection	No Moderation (-)
H_{9b}	IR has a moderating impact on the SOC-COD relationship	No Rejection	Moderation (-)
H_{9c}	IR has a moderating impact on the GOV-COD relationship	Rejection	No Moderation (-)

Discussion on the relationship between IR and WACC

From Panel A of Table 25, we conclude that WACC is positively associated with ESG scores and IR contrary to our expectations. Interestingly, as ESG and its pillars are graded more favorably, the WACC increases. Likewise, WACC is higher for companies who prepare integrated reports. Although this appears to be in conflict with existing studies, it is reasonable to argue that ESG and IR practice are not perceived positively

by investors in an emerging market at all. The perception might be that such practices are expensive since they require too much capital to pursue.

On the other hand, the moderating impact of IR on the relationship between ESG and WACC shows that companies which care for sustainability may exploit the advantages of IR by reducing their WACC. In other words, WACC reduction seems possible when "sustainable" companies also use IR to better communicate their value creating activities. Our results regarding the moderating role of IR is consistent with Albitar et al. (2019) who showed that IR has moderating role on the impact of environmental, social and governance disclosure on financial performance. They emphasize that the moderating role of IR arises because companies which have voluntarily adopted and are presenting an IR have possibility to increase company's financial performance.

Discussion on the relationship between IR and COE

Panel B of Table 25 suggests that the relationship between IR and COE is weak. This is also the case when the ESG-COE nexus is considered. According to these results, neither ESG nor IR has a significant impact on the cost of equity. This can be interpreted as evidence for the unawareness and/or reluctance of investors in attaching importance on such contemporary practices, particularly in an emerging capital market. This insignificance leads to the fact that IR has no moderating impact on the relationship between COE and ESG as well as its pillars.

However, both ESG and IR have the potential to possess an alleviating role as to their negative signs. Hence, it is plausable to expect that the capital market would witness reduction in COE as investors become more sophisticated in time.

Discussion on the relationship between IR and COD

Panel C of Table 25 reveals interesting results. Contrary to the ones that belong to the relationship between IR and COE, our results are significant when COD is considered. Accordingly, we find that high ESG scores translate into low cost of debt. This implies that creditors favor companies with higher ESG scores in setting their lending rates at lower levels. Hence, in contrast to capital market investors, creditors seem to be aware of and value the benefits of sustainability practices.

But, interestingly, IR has a positive relationship with COD indicating that IR preparing companies have higher cost of debt. IR, individually, does not appear to reduce borrowing costs, probably because they are not considered objective. Indeed, these reports are prepared internally and are neither rated nor scored by external parties. Another explanation would be that integrated reports may be perceived as opaque.

The social pillar - and the environment pillar to an extent - have an impact on cost of debt. The social pillar is of particular importance because IR has a moderating role in its relationship with COD. In this way, IR preparing social-sensitive companies may take the advantage of reduced costs in the debt market.

Finally, apart from the moderating role of IR, we shall draw attention to the consistently negative sign of the coefficients of the interaction variables in our models. Even though only the results regarding the governance pillar reveal significance in the sense that governance score decreases WACC and COD only for IR preparing companies, these negative signs indicate that IR has a potential in reducing the cost of funding among “sustainable” companies.

CONCLUSION

The integrated report (IR) is a short-, medium-, and long-term plan for the entire environment that includes rough planning, gaming, and self-development. It is a report that can be clearly articulated in a way that complements the preparation of the key financial and sustainability aspects of the company's operations with an ongoing long-term strategy. The integrated presentation is designed to bring together the most comprehensive of what is included in the reports.

IR improves the quality of information that is disclosed to users. It brings a more holistic and efficient approach for corporate reporting. It enhances the accountability and manageability components for a broad base of capital, i.e., financial, produced, intellectual, human, social, relational and natural. It also intends to encourage the short, medium and long-term value creation.

In this purview, when making investment decisions, investors today want to see not only the financial but also the non-financial risks of companies and to know how companies are managing all these risks and how they are creating value in the short, medium and long term. IR reflects company performance more holistically by providing a framework for all the key information investors need to determine the true value of the company. While the share of physical and financial assets of companies in the enterprise value is decreasing day by day, more holistic and transparent disclosure that includes corporate strategy, business model and environmental, social and governance (ESG) performance reduces uncertainty for investors.

It is commonly accepted that making clear the good and bad aspects of the company's performance increases trust, brand equity, and stakeholder prestige toward the company. Furthemore, greater transparency and high-quality reporting increase investor confidence in the company and make it easier for the company to access funding. Thus, IR can enable companies to gain competitive advantage through cost reduction, operational efficiency, increased brand value, and innovation.

However, there is only a limited number of research made on the topic of IR and its impact on the cost of capital. To that end, we investigate the relationship between IR and cost of capital in this study. We also contribute to the literature by exploring the moderating role of IR on the relationship between ESG scores and the cost of capital.

We mainly employ panel data analysis in order to uncover the impact of IR on cost of capital (WACC), cost of equity (COE), and cost of debt (COD). Our data comprise a sample of total 59 companies listed on BIST and included in the BIST Sustainability Index (XUSRD). Sample period is defined as 2015-2020.

Our results indicate that WACC is positively associated with ESG scores and IR. We conclude that ESG and IR practices are not perceived positively by investors in an emerging market yet. However, the moderating impact of IR on the relationship between ESG and WACC shows that WACC can be reduced when "sustainable" companies also use IR to better communicate their value creating activities.

On the other hand, neither ESG nor IR has a significant impact on the cost of equity. This can be interpreted as evidence for the unawareness and/or reluctance of investors in attaching importance on such contemporary practices, particularly in an emerging capital market.

When COD is considered, creditors seem to be aware of and value the benefits of sustainability practices since we find that high ESG scores translate into low cost of debt. But IR, individually, does not appear to reduce borrowing costs, probably because they are not considered objective or transparent. We also find that IR preparing social-sensitive companies may take the advantage of reduced costs in the debt market.

Finally, apart from the moderating role of IR, we interpret the consistently negative sign of the coefficients of the interaction variables in our models as evidence that IR has a potential in reducing the cost of funding among "sustainable" companies. Hence, it is plausable to expect that the market would witness reduction in the cost of funding as the market participants build knowledge on IR in time.

Our study is not without limitations. We have to underline that data unavailabilty is one of the concerns. For instance, We confine ourselves with 59 companies listed on BIST and included in the XUSRD due to the fact that IR preparing and ESG graded companies are all among the companies included in XUSRD. In other words, we cannot compare IR preparers and non-preparers in a larger sample of firms, because there is no IR preparing company outside this index. Furthermore, our sample period starts from 2015 because of the unavailability of data regarding ESG scores and cost of capital before 2015. We cannot even include new IR preparers since their ESG scores for the year 2021 were not available.

That said, future studies can consider investigation of relationship between IR and financial performance of the companies to better understand the benefits of IR. In addition, analyzing the content of IR in order to reveal their quality from a linguistic point of view warrants future research.

Our results indicate that WACC is positively associated with ESG scores and IR. We conclude that ESG and IR practices are not perceived positively by investors in an emerging market yet. **We are of the view that these practices are expensive since they require too much capital to pursue.** However, the moderating impact of IR on the relationship between ESG and WACC shows that WACC can be reduced when “sustainable” companies also use IR to better communicate their value creating activities.

APPENDIX 1. TEZ ÇALIŞMASI ORİJİNALLİK RAPORU

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
YÜKSEK LİSANS TEZ ÇALIŞMASI ORİJİNALLİK RAPORU

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
İŞLETME ANABİLİM DALI BAŞKANLIĞI'NA

Tarih: 03/06/2022

Tez Başlığı : Entegre Raporlama ve Sermaye Maliyeti Arasındaki İlişkinin İncelenmesi: Borsa İstanbul (BİST) Örneği

Yukarıda başlığı gösterilen tez çalışmamın a) Kapak sayfası, b) Giriş, c) Ana bölümler ve d) Sonuç kısımlarından oluşan toplam 80 sayfalık kısmına ilişkin, 03/06/2022 tarihinde ~~şahsım/~~tez danışmanım tarafından Turnitin adlı intihal tespit programından aşağıda işaretlenmiş filtrelemeler uygulanarak alınmış olan orijinallik raporuna göre, tezimin benzerlik oranı % 20 'dir.

Uygulanan filtrelemeler:

1- ☒ Kabul/Onay ve Bildirim sayfaları hariç
2- ☒ Kaynakça hariç
3- ☐ Alıntılar hariç
4- ☒ Alıntılar dâhil
5- ☒ 5 kelimeden daha az örtüşme içeren metin kısımları hariç

Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü Tez Çalışması Orijinallik Raporu Alınması ve Kullanılması Uygulama Esasları'nı inceledim ve bu Uygulama Esasları'nda belirtilen azami benzerlik oranlarına göre tez çalışmamın herhangi bir intihal içermediğini; aksinin tespit edileceği muhtemel durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Gereğini saygılarımla arz ederim.

Tarih ve İmza

Adı Soyadı: Lamija Rizvic
Öğrenci No: N19123592
Anabilim Dalı: İşletme
Programı: Muhasebe-Finans

DANIŞMAN ONAYI

UYGUNDUR.

Doç. Dr. Burak PİRGAİP

APPENDIX 2. MASTER'S THESIS ORIGINALITY REPORT

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
MASTER'S THESIS ORIGINALITY REPORT

4.3. HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
BUSINESS ADMINISTRATION DEPARTMENT

Date: 03/06/2022

Thesis Title : The examination of the relationship between integrated reporting and cost of capital: evidence from Borsa Istanbul

According to the originality report obtained by ~~myself/~~my thesis advisor by using the Turnitin plagiarism detection software and by applying the filtering options checked below on 03/06/2022 for the total of 80 pages including the a) Title Page, b) Introduction, c) Main Chapters, and d) Conclusion sections of my thesis entitled as above, the similarity index of my thesis is 20 %.

Filtering options applied:

1. ☒ Approval and Decleration sections excluded
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I declare that I have carefully read Hacettepe University Graduate School of Social Sciences Guidelines for Obtaining and Using Thesis Originality Reports; that according to the maximum similarity index values specified in the Guidelines, my thesis does not include any form of plagiarism; that in any future detection of possible infringement of the regulations I accept all legal responsibility; and that all the information I have provided is correct to the best of my knowledge.

I respectfully submit this for approval.

Date and Signature

Name Surname:	Lamija Rizvic
Student No:	N19123592
Department:	Business Administration
Program:	Accounting and Finance

ADVISOR APPROVAL

APPROVED.

Assoc. Prof. Dr. Burak PİRGAİP

APPENDIX 3. TEZ ÇALIŞMASI ETİK KOMİSYON MUAFİYETİ FORMU

HACETTEPE ÜNİVERSİTESİ
SOSYAL BİLİMLER ENSTİTÜSÜ
TEZ ÇALIŞMASI ETİK KOMİSYON MUAFİYETİ FORMU

4.4. **HACETTEPE ÜNİVERSİTESİ**
SOSYAL BİLİMLER ENSTİTÜSÜ
İŞLETME ANABİLİM DALI BAŞKANLIĞI'NA

Tarih: 03/06/2022

Tez Başlığı: Entegre raporlama ve sermaye maliyeti arasındaki ilişkinin incelemesi: Borsa İstanbul örneği

Yukarıda başlığı gösterilen tez çalışmam:

1. İnsan ve hayvan üzerinde deney niteliği taşımamaktadır,
2. Biyolojik materyal (kan, idrar vb. biyolojik sıvılar ve numuneler) kullanılmasını gerektirmemektedir.
3. Beden bütünlüğüne müdahale içermemektedir.
4. Gözlemsel ve betimsel araştırma (anket, mülakat, ölçek/skala çalışmaları, dosya taramaları, veri kaynakları taraması, sistem-model geliştirme çalışmaları) niteliğinde değildir.

Hacettepe Üniversitesi Etik Kurullar ve Komisyonlarının Yönergelerini inceledim ve bunlara göre tez çalışmamın yürütülebilmesi için herhangi bir Etik Kurul/Komisyon'dan izin alınmasına gerek olmadığını; aksi durumda doğabilecek her türlü hukuki sorumluluğu kabul ettiğimi ve yukarıda vermiş olduğum bilgilerin doğru olduğunu beyan ederim.

Gereğini saygılarımla arz ederim.

Tarih ve İmza

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APPENDIX 4. ETHICS COMMISSION FORM FOR THESIS

HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
ETHICS COMMISSION FORM FOR THESIS

4.5. HACETTEPE UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
BUSİNESS ADMINISTRATION DEPARTMENT

Date: 03/06/2022

Thesis Title: The examination of the relationship between integrated reporting and cost of capital: Evidence from Borsa Istanbul

My thesis work related to the title above:

1. Does not perform experimentation on animals or people.
2. Does not necessitate the use of biological material (blood, urine, biological fluids and samples, etc.).
3. Does not involve any interference of the body's integrity.
4. Is not based on observational and descriptive research (survey, interview, measures/scales, data scanning, system-model development).

I declare, I have carefully read Hacettepe University's Ethics Regulations and the Commission's Guidelines, and in order to proceed with my thesis according to these regulations I do not have to get permission from the Ethics Board/Commission for anything; in any infringement of the regulations I accept all legal responsibility and I declare that all the information I have provided is true.

I respectfully submit this for approval.

Date and Signature

Lamija Rizvic
N19123592
Business Administration
Accounting and Finance
☒ MA ☐ Ph.D. ☐ Combined MA/ Ph.D.

ADVISER COMMENTS AND APPROVAL

Assoc. Prof. Dr. Burak PİRGAİP

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