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Cost of Capital and Voluntary Disclosure of Integrated Reporting:  
The Role of Institutional Factors

*Custo de capital e divulgação voluntária do Relato Integrado:  
O papel dos fatores institucionais*

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The Role of Institutional Factors

Tese apresentada ao Programa de Pós-Graduação em Controladoria e Contabilidade do Departamento de Contabilidade e Atuária da Faculdade de Economia, Administração e Contabilidade da Universidade de São Paulo como requisito parcial para a obtenção do título de Doutora em Ciências.

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presentes e me deram força nessa  
jornada.*



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*A satisfação está no esforço e não apenas na  
realização final.  
Mahatma Gandhi*



## RESUMO

Zaro, E. S. (2019). *Custo de capital e divulgação voluntária do Relato Integrado: O papel dos fatores institucionais* (Tese de Doutorado, Universidade de São Paulo, São Paulo)

Relato Integrado <RI> é uma iniciativa que encoraja as empresas a analisarem seu modelo de negócio de uma forma holística. Esse processo inclui a consideração ativa das perspectivas financeiras e não financeiras para entender todo o capital gerado, mantido e destruído pela companhia ao longo do tempo. Isso permite que as empresas entendam suas atividades, considerando todos os fatores usados ou afetados, e também todo o contexto da organização, levando ao enraizamento do conceito de Pensamento Integrado na cultura empresarial. De acordo com a Teoria de Sistemas, a análise integrada de aspectos financeiros e não financeiros, como proposto pelo <RI>, pode levar a conclusões diferentes das análises separadas, devido às conexões e interações entre eles. Aplicar o conceito de Pensamento Integrado pode resultar em duas vantagens para a empresa: 1) melhoria nos processos de gestão, especialmente ao que diz respeito aos capitais não financeiros; e 2) redução da assimetria de informação. Assim sendo, baseando-se na Teoria de *Disclosure* Voluntário, esses dois fatores podem resultar em benefícios econômicos para a organização. Logo, esta pesquisa investiga como os custos de capital próprio e de terceiros se relacionam com a divulgação do relato integrado e quais os impactos de fatores institucionais nessa relação. Analisou-se uma amostra global de 25.311 observações, de 2010 a 2017, empregando um método que considera duas dimensões: 1) Tratamento: adotantes voluntários de Relato Integrado comparados a um grupo de tratamento selecionado pelo procedimento de PSM (Propensity Score Matching); e 2) Tempo: ambos os grupos foram comparados nos períodos anterior e posterior a adoção. Os resultados indicaram que a divulgação de relato integrado é negativamente relacionada com o custo de capital próprio. Os resultados são robustos após controlar por diversos fatores em nível de firma e país, e ainda por setor. Análises adicionais mostram que esse efeito negativo se concentra em empresas num ambiente de alto *enforcement* e revelou que companhias em ambientes orientados aos investidores (*Shareholder Oriented*) verificaram uma redução maior do custo de capital, quando comparadas a companhias em um ambiente orientado aos *Stakeholders*. Entre os achados também destacou-se que os credores respondem à divulgação de relato integrado de diversas maneiras. Apesar da diferença encontrada no custo de capital próprio relacionado à divulgação de relato integrado, foram encontradas evidências limitadas da relação entre o custo da dívida e a divulgação de relato integrado, até mesmo quando subamostras foram analisadas frente a fatores institucionais. Conduziu-se investigações mais aprofundadas sobre o efeito de asseguarção na relação entre custo de dívida e divulgação do <RI>, e identificou-se que as companhias num ambiente de alto *enforcement* que asseguram suas informações de RSC (Responsabilidade Social Corporativa) apresentam um custo de dívida menor. Este estudo contribui para a literatura de relato integrado mostrando como os custos de capital próprio e de terceiros se relacionam à essa iniciativa, considerando-se uma amostra global de adotantes voluntários. Analisou-se o impacto de fatores institucionais nessa relação e empregou-se um método robusto, diferenciando este de outros estudos.

*Palavras-chave:* Custo de Capital Próprio; Custo de Dívida; Relato Integrado; Pensamento Integrado; Fatores Institucionais.

## ABSTRACT

Zaro, E. S. (2019). *Cost of Capital and Cost of Capital and Voluntary Disclosure of Integrated Reporting: The Role of Institutional Factors* (Ph.D. Dissertation, University of São Paulo, São Paulo)

Integrated Reporting <IR> is an initiative that encourages companies to analyze their business model in a holistic way. This process includes active consideration of financial and non-financial perspectives in order to understand all the capital generated, maintained and destroyed by the company over time. It allows companies to understand their activities, considering all factors used or affected, as well as the organization's entire context, causing the concept of Integrated Thinking to be ingrained in the company culture. Based on the Systems Theory, the integrated analysis of financial and non-financial aspects – as proposed by <IR> – can lead to different conclusions than with separate analyses because of the connections and interrelations between those two aspects. Application of the Integrated Thinking concept may result in two main advantages for the company: 1) an improvement in its management processes, especially with respect to non-financial capitals; and 2) a decrease in information asymmetry. Therefore, based on the Voluntary Disclosure Theory, these two factors may result in economic benefits for the organization. Thus, this research investigates how the cost of equity and cost of debt relate to the Integrated Reporting disclosure, and what is the impact of institutional factors on that relationship. A global sample of 25,311 firm-year observations, from 2010 to 2017, was analyzed employing a method that considered two dimensions: 1) Treatment: voluntary adopters of Integrated Reporting compared to a control group selected by a PSM (Propensity Score Matching) procedure; and 2) Time: both groups were compared in the periods before and after the adoption. Results indicated that the Integrated Reporting disclosure is negatively related to the cost of equity. The results are robust after controlling for several firm-level and country-level factors, and by industry. Further analyses showed that this negative effect is more prevalent for companies with high enforcement environments and revealed that companies in a Shareholder Oriented environment achieved a greater reduction in the cost of equity, when compared to companies in a Stakeholder Oriented environment. Evidence also showed that debtholders and equity holders respond differently to the Integrated Reporting disclosure. Despite the difference in cost of equity for companies adopting Integrated Reporting, limited evidence of a relationship between cost of debt and <IR> disclosure was found, even when subsamples were analyzed in view of institutional factors. Further investigations on the effect of assurance in the relationship between cost of debt and <IR> disclosure were conducted, uncovering that companies in a High Enforcement environment that assure their CSR (Corporate Social Responsibility) information showed a lower cost of debt. This study contributes to the literature of Integrated Reporting by showing how it relates to cost of equity and cost of debt, considering a global sample of voluntary adopters. The study also analyzed the impact of institutional factors in this relationship, employing a robust method of analysis that differentiates it from other studies.

*Key words:* Cost of Equity; Cost of Debt; Integrated Reporting; Integrated Thinking; Institutional Factors.

## LIST OF FIGURES

Figure 1. Libby box (adapted from Libby et al., 2002, p.795).....	81
Figure 2. Variables description .....	86
Figure 3. Scatterplot before wisorizing financial variables – Sample ALL.....	151
Figure 4. Scatterplot after wisorizing financial variables – Sample ALL.....	152
Figure 5. Results of the parallelism test for cost of equity in the control and treatment groups – Sample ALL. ....	153
Figure 6. Results of the parallelism test for cost of debt in the control and treatment groups – Sample ALL. ....	154

## LIST OF TABLES

Table 1. Ratings categories and equivalent ratings according to EIKON “Rating SP Equivalent Rank” .....	82
Table 2. Frequency by year for the sample “ALL” .....	87
Table 3. Frequency by industry for the sample “ALL” .....	87
Table 4. Frequency by country for the sample “ALL” .....	88
Table 5. Scores of Institutional Factors and frequency by country for the Sample “ALL” .....	89
Table 6. Sample ALL - Descriptive statistics by adopters (treatment) and non-adopters (control).....	91
Table 7. Correlation Matrix $K_e$ CAPM – Sample ALL .....	93
Table 8. Univariate analysis – Sample ALL .....	94
Table 9. Univariate analysis – Sample IIRC .....	94
Table 10. IR and cost of equity – Sample ALL (H1).....	95
Table 11. IR and cost of equity – Sample IIRC (H1).....	96
Table 12. IR, cost of equity and institutional factors – Sample ALL (H1).....	97
Table 13. IR, cost of equity and institutional factors – Sample IIRC (H1).....	98
Table 14. IR, cost of equity and Enforcement – Sample ALL (H3a) .....	99
Table 15. IR, cost of equity and High and Low Enforcement – Sample ALL (H3a) .....	100
Table 16. IR, cost of equity and Trust – Sample ALL (H4a).....	102
Table 17. IR, cost of equity and High and Low Trust – Sample ALL (H4a).....	103
Table 18. IR, cost of equity and Stakeholder Orientation – Sample ALL (H5a).....	104
Table 19. IR, cost of equity and High and Low Stakeholder Orientation – Sample ALL (H5a) .....	105
Table 20. Correlation Matrix $K_i$ Net – Sample ALL .....	107
Table 21. Univariate analysis – Sample ALL .....	108
Table 22. IR and cost of debt – Sample ALL (H2) .....	109
Table 23. IR, cost of debt and institutional factors – Sample ALL (H2).....	109
Table 24. IR and cost of debt (credit rating) – Sample ALL (H2).....	111
Table 25. IR, cost of debt (credit rating) and institutional factors – Sample ALL (H2).....	112
Table 26. IR, cost of debt and Enforcement – Sample ALL (H3b) .....	113
Table 27. IR, cost of debt and High and Low Enforcement – Sample ALL (H3b) .....	114
Table 28. IR, cost of debt (credit rating) and Enforcement – Sample ALL (H3b) .....	115

Table 29. IR, cost of debt (credit rating) and High and Low Enforcement – Sample ALL (H3b) .....	116
Table 30. IR, cost of debt and Trust – Sample ALL (H4b).....	117
Table 31. IR, cost of debt and Stakeholder Orientation – Sample ALL (H5b).....	118
Table 32. Frequency of Assurance – Sample ALL .....	120
Table 33. Frequency of Assurance – Sample IIRC.....	120
Table 34. IR, cost of debt (interest rate and credit rating) and assurance .....	121
Table 35. IR, cost of debt and assurance (Standard Errors not clustered at the firm level)...	122
Table 36. IR, cost of debt (interest rate and credit rating) and Big4 .....	123
Table 37. IR, cost of debt, institutional factors and Assurance (Triple Interaction) – Sample ALL .....	124
Table 38. IR, cost of debt, institutional factors and Assurance Big 4 (Triple Interaction) – Sample ALL .....	125
Table 39. IR, cost of debt (credit rating), Institutional factors and Assurance (Triple Interaction)– Sample ALL .....	126
Table 40. IR, cost of debt (credit rating), Institutional factors and Assurance Big 4 (Triple Interaction) – Sample ALL .....	127
Table 41. Sample ALL - Descriptive statistics across pre- and post-adoption periods by adopters (treatment) and non-adopters (control).....	155
Table 42. Frequency of assurance by country for Sample ALL .....	157
Table 43. IR, cost of equity and Enforcement – Sample IIRC (H3a) .....	158
Table 44. IR, cost of equity and High and Low Enforcement – Sample IIRC (H3a) .....	159
Table 45. IR, cost of equity and Trust – Sample IIRC (H4a) .....	160
Table 46. IR, cost of equity and High and Low Trust – Sample IIRC (H4a) .....	161
Table 47. IR, cost of equity and Stakeholder Orientation – Sample IIRC (H5a).....	162
Table 48. IR, cost of equity and High and Low Stakeholder Orientation – Sample IIRC (H5a) .....	163
Table 49. IR and cost of debt – Sample IIRC (H2).....	164
Table 50. IR, cost of debt and institutional factors – Sample IIRC (H2).....	165
Table 51. IR, cost of debt and Enforcement – Sample IIRC (H3b).....	166
Table 52. IR, cost of debt and High and Low Enforcement – Sample IIRC (H3b).....	167
Table 53. IR, cost of debt and Trust – Sample IIRC (H4b) .....	168
Table 54. IR, cost of debt and High and Low Trust – Sample IIRC (H4b) .....	169
Table 55. IR, cost of debt and Stakeholder Orientation – Sample IIRC (H5b) .....	170

Table 56. IR, cost of debt and High and Low Stakeholder Orientation – Sample IIRC (H5b)	171
Table 57. IR, cost of debt and assurance – Sample IIRC	172
Table 58. IR, cost of debt and Big4– Sample IIRC	173
Table 59. IR, cost of debt, High and Low Enforcement and Assurance – Sample IIRC	174
Table 60. IR, cost of debt, High and Low Enforcement and Assurance Big 4 – Sample IIRC	175
Table 61. IR, cost of debt, High and Low Trust and Assurance – Sample IIRC	176
Table 62. IR, cost of debt, High and Low Trust and Assurance Big 4 – Sample IIRC	177
Table 63. IR, cost of debt, High and Low Stakeholder Orientation and Assurance – Sample IIRC	178
Table 64. IR, cost of debt, High and Low Stakeholder Orientation and Assurance Big 4 – Sample IIRC	179
Table 65. IR and cost of debt (credit rating) – Sample IIRC (H2)	180
Table 66. IR, cost of debt (credit rating) and institutional factors – Sample IIRC (H2)	181
Table 67. IR, cost of debt (credit rating) and Enforcement – Sample IIRC (H3b)	182
Table 68. IR, cost of debt (credit rating) and High and Low Enforcement – Sample IIRC (H3b)	183
Table 69. IR, cost of debt (credit rating) and Trust – Sample IIRC (H4b)	184
Table 70. IR, cost of debt (credit rating) and High and Low Trust – Sample IIRC (H4b)	185
Table 71. IR, cost of debt (credit rating) and Stakeholder Orientation – Sample IIRC (H5b)	186
Table 72. IR, cost of debt (credit rating) and High and Low Stakeholder Orientation – Sample IIRC (H5b)	187
Table 73. IR, cost of cost of debt (credit rating) and assurance – Sample IIRC	188
Table 74. IR, cost of debt (credit rating) and Big4– Sample IIRC	189
Table 75. IR, cost of debt (credit rating), High and Low Enforcement and Assurance – Sample IIRC	190
Table 76. IR, cost of debt (credit rating), High and Low Enforcement and Assurance Big 4 – Sample IIRC	191
Table 77. IR, cost of debt (credit rating), High and Low Trust and Assurance – Sample IIRC	192
Table 78. IR, cost of debt (credit rating), High and Low Trust and Assurance Big 4 – Sample IIRC	193

Table 79. IR, cost of debt (credit rating), High and Low Stakeholder Orientation and Assurance – Sample IIRC .....	194
Table 80. IR, cost of debt (credit rating), High and Low Stakeholder Orientation and Assurance Big 4 – Sample IIRC .....	195
Table 81. IR, cost of debt and High and Low Trust – Sample ALL (H4b) .....	196
Table 82. IR, cost of debt (credit rating) and Trust – Sample ALL (H4b) .....	197
Table 83. IR, cost of debt (credit rating) and High and Low Trust – Sample ALL (H4b) ....	198
Table 84. IR, cost of debt and High and Low Stakeholder Orientation – Sample ALL (H5b) .....	199
Table 85. IR, cost of debt (credit rating) and Stakeholder Orientation – Sample ALL (H5b) .....	200
Table 86. IR, cost of debt (credit rating) and High and Low Stakeholder Orientation – Sample ALL (H5b).....	201
Table 87. IR, cost of debt, institutional factors and Assurance – Sample ALL.....	202
Table 88. IR, cost of debt, institutional factors and Assurance Big 4 – Sample ALL .....	203
Table 89. IR, cost of debt (credit rating), Institutional factors and Assurance – Sample ALL .....	204
Table 90. IR, cost of debt (credit rating), Institutional factors and Assurance Big 4 – Sample ALL .....	205



## LIST OF EQUATIONS

Equation 1. Model 1 analysis of the relationship between cost of capital and <IR>.....	79
Equation 2. Model 2 analysis of the impact of institutional factors in the relationship between cost of capital and <IR>.....	80



## ACRONYMS AND ABBREVIATIONS

APA	American Psychology Association.
Big 4	Big four audit firms.
CAPM	Capital Asset Pricing Model.
CDP	Carbon Disclosure Project.
CSR	Corporate Social Responsibility.
ESG	Environmental, Social and Financial.
FEA/USP	School of Economics, Business, Accounting and Actuarial Sciences of the University of São Paulo.
GRI	Global Reporting Initiative
Ke	Cost of equity.
Ki	Cost of debt.
IASB	International Accounting Standards Board.
IFRS	International Financial Reporting Standards.
IIRC	International Integrated Reporting Council.
IPO	Initial Public Offering.
<IR>	Integrated Reporting.
JSE	Johannesburg Stock Exchange.
Rating SP	Rating Standard & Poor`s.
ROA	Return on Assets.
OLS	Ordinary Least Squares.
U.S.	United States of America.



## CONTENTS

<b>1. INTRODUCTION.....</b>	<b>27</b>
<i>1.1 Context and Literature Background.....</i>	<i>27</i>
<i>1.2 Institutional Factors, Integrated Reporting and Cost of Capital.....</i>	<i>29</i>
<i>1.3 Research Question.....</i>	<i>30</i>
<i>1.4 Research Contribution .....</i>	<i>30</i>
<i>1.5 Dissertation Structure .....</i>	<i>34</i>
<b>2. LITERATURE REVIEW AND BACKGROUND.....</b>	<b>35</b>
<i>2.1 Integrated Thinking and Reporting.....</i>	<i>35</i>
2.1.1 Connectivity and Interdependencies of Factors .....	38
2.1.2 Materiality .....	41
2.1.3 Sustainability Over Time .....	44
2.1.4 Integrated Reporting Metrics .....	46
<i>2.2 Economic Benefits.....</i>	<i>50</i>
2.2.1 Voluntary Disclosure Theory.....	51
2.2.2 Information Asymmetry.....	53
2.2.3 Stakeholder Theory .....	54
<i>2.3 Cost of Equity.....</i>	<i>55</i>
2.3.1 Proxy for Cost of Equity .....	61
<i>2.4 Cost of Debt.....</i>	<i>63</i>
<i>2.5 Institutional Factors.....</i>	<i>66</i>
2.5.1 Enforcement of the Law .....	66
2.5.2 Societal Trust.....	69
2.5.3 Stakeholder Orientation.....	71
<b>3. METHOD.....</b>	<b>75</b>
<i>3.1 Sample and Datasets .....</i>	<i>75</i>
3.1.1 Integrated Reporting Measures .....	75

3.1.2 Propensity Score Matching .....	77
3.1.3 Data Collection.....	78
3.2 <i>Econometric Specification</i> .....	79
3.2.1 Libby Box.....	80
3.2.2 Dependent variables .....	81
3.2.3 Institutional Factors.....	82
3.2.4 Control Variables .....	84
3.2.5 Descriptive Statistics .....	87
<b>4. DATA ANALYSIS .....</b>	<b>93</b>
4.1 <i>Cost of Equity</i> .....	93
4.1.1 Correlation and Univariate Analyses .....	93
4.1.2 Integrated Reporting and Cost of Equity.....	95
4.1.3 Integrated Reporting, Cost of Equity and Enforcement.....	99
4.1.4 Integrated Reporting, Cost of Equity and Trust .....	102
4.1.5 Integrated Reporting, Cost of Equity and Stakeholder Orientation .....	104
4.2 <i>Cost of Debt</i> .....	107
4.2.1 Correlation and Principal Components Analysis (PCA).....	107
4.2.2 Integrated Reporting and Cost of Debt .....	108
4.2.3 Integrated Reporting, Cost of Debt and Enforcement.....	113
4.2.4 Integrated Reporting, Cost of Debt and Trust .....	116
4.2.5 Integrated Reporting, Cost of Debt and Stakeholder Orientation .....	118
4.2.6 Additional tests - Integrated Reporting, Cost of Debt and Assurance .....	119
<b>5. FINAL REMARKS.....</b>	<b>129</b>
<b>REFERENCES.....</b>	<b>133</b>
<b>APPENDIX A: SCATTERPLOT BEFORE AND AFTER WINSORIZING FINANCIAL VARIABLES.....</b>	<b>151</b>
<b>APPENDIX B: GRAPH TO INFER PARALLELISM .....</b>	<b>153</b>

<b>APPENDIX C: DESCRIPTIVE STATISTICS.....</b>	<b>155</b>
<b>APPENDIX D: FREQUENCY OF ASSURANCE BY COUNTRY.....</b>	<b>157</b>
<b>APPENDIX E: RESULTS FOR SAMPLE IIRC – COST OF EQUITY.....</b>	<b>158</b>
<b>APPENDIX F: RESULTS FOR SAMPLE IIRC – COST OF DEBT.....</b>	<b>164</b>
<b>APPENDIX G: RESULTS FOR SAMPLE IIRC – COST OF DEBT (CREDIT RATING) .</b>	<b>180</b>
<b>APPENDIX H: RESULTS FOR SAMPLE ALL – COST OF DEBT AND CREDIT RATING.....</b>	<b>196</b>
<b>APPENDIX I: COST OF EQUITY – EX ANTE MODELS.....</b>	<b>206</b>



## 1. INTRODUCTION

### *1.1 Context and Literature Background*

Integrated Reporting <IR> is an initiative that encourages companies to analyze and disclose their value creation process by taking into account the following six capitals: financial, manufactured, intellectual, human, social and relationship, and natural (International Integrated Reporting Council IIRC, 2013).

A company that engages in this initiative should rethink its strategy to incorporate financial and non-financial material aspects. Based on its new strategy, the active consideration of integrated multiple capitals will begin to incorporate the concept into the decision-making process and performance evaluations, eventually permeating the whole organization. This process is called integrated thinking (Feng, Cummings, & Tweedie, 2017; IIRC, 2013; Mervelskemper & Streit, 2017). Additionally, the company should analyze its short, medium and long term perspectives, while pursuing its continuity in a sustainable way (Eccles, Ioannou, & Serafeim, 2014; Jensen & Berg, 2012).

According to Integrated Reporting, from a sustainable and long term perspective, implementing the business model analysis can result in the improvement of financial and non-financial performances (Eccles et al., 2014), and increase the quality, timeliness and understandability of the disclosed information (Eccles & Krzus, 2010; Haji & Anifowose, 2016b).

Adopting Integrated Reporting has positive effects on management processes and disclosure, and tends to bring economic benefits to the company. Among these benefits one can highlight the increase of stock liquidity and firm value (Barth, Cahan, Chen, & Venter, 2017; Plumlee, Brown, Hayes, & Marshall, 2015), enhancement of value relevance of the disclosure (Baboukardos & Rimmel, 2016), and an increase in analysts' accuracy (Bernardi & Stark, 2018). This study specifically investigates the relationship between Integrated Reporting disclosure, and the cost of equity and cost of debt.

The aforementioned benefits are related to an improvement in management, which results from the implementation of integrated thinking. Economic benefits also occur due to an increase in transparency and a reduction in information asymmetry. In other words, the intent of Integrated Reporting is to provide a broader view of an organization's actions and perspectives (Barth et al., 2017).

The reduction of information asymmetry and improvement in the management of the financial and non-financial aspects of the company can be related with the reduction of cost of equity and cost of debt. Nevertheless, they are observed in different ways because different users of the information have different goals and informational needs. Cost of equity is based on the stock price, which represents the expectations of the investors about the future performance of the company. According to the semi-strong form of efficient markets, stock price reflects all public information available about the company (Scott, 2012). It represents the predictions of the investors about future earnings, cash flow and dividends. Therefore, if the Integrated Reporting increases the quality of the company's disclosure, and improves the risk management and performance of financial and non-financial capitals, a negative relationship between Integrated Reporting disclosure and the cost of equity is expected.

With respect to the cost of debt, lenders are interested in the organization's ability to generate cash flows to meet the established contractual terms. Reducing information asymmetry, improving non-financial performance, and considering long-term goals tend to affect the cost of debt (Bae & Goyal, 2009; Chava, 2014; Sengupta, 1998). Therefore, Integrated Reporting disclosure can be linked to a lower cost of debt. However, Ball, Li and Shivakumar (2015) demonstrated that creditors reacted to an increase of discretion in accounting information by lowering the amount of accounting covenants requested. This indicates that creditors react to information with higher level of credibility. Consequently, Integrated Reporting disclosure is only expected to be negatively related to the cost of debt in high credibility settings. Thus, it is possible to perceive a different effect of the Integrated Reporting disclosure when comparing cost of equity and cost of debt.

It is also possible to argue that engagement with the Integrated Reporting initiative may also have no effect on the cost of equity or cost of debt. Investors and lenders may consider that the information presented in an integrated report is the same as those previously presented in other company disclosures or that it is not useful (Lodhia, 2015; Steyn, 2014). In addition, users may not identify substantial changes in the decision-making process (Ruiz-Lozano & Tirado-Valencia, 2016; Solomon & Maroun, 2012). Therefore, the adoption of the integrated report would have no effect on the cost of capital. Another possibility is that the integration of information leads to an increase in complexity, which can lead to a less efficient decision-making process (Lodhia, 2015), and a decrease in the understanding of the information presented (Bucaro, Jackson, & Lill, 2017; Reimsbach, Hahn, & Gürtürk, 2018).

Therefore, further research on the economic benefits related to Integrated Reporting disclosure is necessary in order to explore other factors that may affect this relationship, such as institutional factors, which will be discussed in the next section.

### ***1.2 Institutional Factors, Integrated Reporting and Cost of Capital***

The relationship between Integrated Reporting and economic benefits is affected by institutional factors that influence the development of the information and its users' perception regarding disclosure. Thus, this study investigates the role of the following institutional factors: Enforcement of the Law, Societal Trust, and Stakeholder Orientation.

The enforcement of the law in a country affects the way companies respond to mandatory and voluntary demands (Bhattacharya & Daouk, 2009; Leuz, Nanda, & Wysocki, 2007). Even though voluntary initiatives are essentially not based on regulation, companies located in countries with a strong legal systems are pressured to actually implement the proposal, rather than just adopting the initiative as a label (Christensen, Hail, & Leuz, 2013; Daske, Hail, Leuz, & Verdi, 2008). Additionally, such companies are subjected to more mechanisms that punish misstatements (Casey & Grenier, 2015). Furthermore, there is evidence that companies in countries with higher levels of law enforcement exhibit a more ethical behavior (J. L. Campbell, 2007; Chih, Chih, & Chen, 2010; Leuz et al., 2007). Therefore, in these countries the Integrated Reporting disclosure is expected to be more aligned with its framework and generate stronger economic benefits. (Bhattacharya & Daouk, 2009; Dhaliwal, Radhakrishnan, Tsang, & Yang, 2012; Frías-Aceituno, Rodríguez-Ariza, & García-Sánchez, 2013).

Trust is another institutional factor that was investigated. Societal Trust is the feeling of trust between individuals in a community. In this environment, the trust factor can change the manner in which transactions are shaped (Kanagaretnam, Khokhar, & Mawani, 2018), since individuals who believe each other can be more willing to take part in a transaction and negotiate the requested warranties.

Based on the argumentation of Nanda and Wysocki (2011), it is proposed that, in a high trust environment, an Integrated Reporting disclosure can have both a positive or a negative effect on the cost of capital, when compared to a low trust environment.

On the one hand, the capital providers in a high trust environment have a lower probability of moral risk – the risk that managers are not performing in the best interest of the capital provider – resulting in a lower value relevance of information (Kanagaretnam, Khokhar, et al.,

2018; Nanda & Wysocki, 2011). Therefore, the Integrated Reporting disclosure is expected to have a lower effect in High Trust countries. On the other hand, the company's capital providers can assign more value to the information in a high trust environment. In line with the evidence provided by Nanda and Wysocki (2011), users perceive the information as more credible and increase the demand for information. Additionally, the Integrated Reporting framework encourages companies to provide information that was not requested before, namely the connectivity and interdependences between capitals, or the long-term perspectives of the business. For this reason, users' reaction in a high trust environment is expected to be greater when compared to users in a low trust environment (Feng et al., 2017; IIRC, 2013).

Another aspect to be highlighted is that trust is an informal institutional factor that can affect the relationship between Integrated Reporting, and the costs of equity and debt. However, Meng and Yin (2018), and Qian, Cao and Cao (2018) showed that formal institutional factors, like enforcement, usually have a greater effect than informal ones, which can minimize or mitigate the informal factor effect.

The last institutional factor investigated was Stakeholder Orientation. In Stakeholder Oriented countries, there is a wide range of non-shareholders who are legitimized to request information from the companies (Bradley, Schipani, Sundaram, & Walsh, 1999; Zhou, Simnett, & Green, 2016) and to control their actions (Ramanna, 2013). Companies in these Stakeholder Oriented countries are expected to produce more detailed and useful information due to the informational needs of multiple stakeholders, thus attaining stronger economic benefits from the disclosure of Integrated Reporting (Dhaliwal, Li, Tsang, & Yang, 2014; Dhaliwal et al., 2012). Nevertheless, Integrated Reporting is focused on the informational needs of the capital providers group (IIRC, 2013), to which material information is then disclosed. This can result in stronger economic benefits for companies in Shareholder Oriented countries.

### ***1.3 Research Question***

Based on the argumentation presented above, the research question to be investigated is: **How does cost of capital relate to Integrated Reporting disclosure and what is the impact of institutional factors on this relationship?**

### ***1.4 Research Contribution***

The relationship between Integrated Reporting voluntary disclosure and the cost of capital, both equity and debt, were analyzed. The fact that the purpose of Integrated Reporting is to help the decision-making process of the capital providers, both equity and debt, is what confers importance to this research. The IIRC states that “Integrated Reporting (<IR>) promotes a more cohesive and efficient approach to corporate reporting and aims to improve the quality of information available to providers of financial capital to enable a more efficient and productive allocation of capital (IIRC, 2013, p. 4).”

Existing literature focused on the effect of financial and economic information on costs of equity and debt (Christensen et al., 2013; Daske et al., 2008; Francis, Nanda, & Olsson, 2008; Sengupta, 1998), and the effect of sustainability, environmental and CSR information on costs of equity and debt (Bauer & Hann, 2010; Chava, 2014; Dhaliwal et al., 2012; Jung, Herbohn, & Clarkson, 2016; Ye & Zhang, 2011).

Therefore, the presentation of integrated financial and non-financial information needs be further investigated. The effect can be negative if users perceive this information and/or changes in management’s decision making to be relevant, especially concerning non-financial capitals and long-term goals. It can result in no effect if users do not consider the information useful or they cannot identify changes in the company’s activities. Furthermore, the result can be positive if users consider the information to be excessively complex due to the integration of financial and non-financial information.

Initial evidence of the economic benefits related to Integrated Reporting disclosure was gathered mainly from South African companies. This is due to the fact that, since 2010, the Johannesburg Stock Exchange (JSE) made this disclosure compulsory for all listed companies. The results indicate that Integrated Reporting disclosure is value relevant for investors (Baboukardos & Rimmel, 2016), positively associated with analysts' accuracy (Bernardi & Stark, 2018; Zhou, Simnett, & Green, 2017), positively related to stock liquidity and firm value (Barth et al., 2017), and negatively related to cost of capital (Zhou et al., 2017). Contradicting this last result, Barth et al. (2017) presented evidence that Integrated Reporting is not correlated with cost of equity. Faced with these mixed results about the relationship between Integrated Reporting and cost of equity, this research further investigated this relation.

A global sample of voluntary adopters of Integrated Reporting was also analyzed in order to verify if the economic benefits expected from the mandatory adoption of Integrated Reporting were also present in other countries. The importance of this question lies mainly in the

different effects that can ensue from the voluntary adoption (Daske et al., 2008; Doukakis, 2014).

The Voluntary Disclosure Theory is the foundation for this research in that it advocates that companies have incentives to voluntarily disclose information, which in turn can decrease information asymmetry. The literature already documents that mitigating information asymmetry can bring financial benefits (Diamond & Verrecchia, 1991; Verrecchia, 2001). This research contributes to the literature on voluntary disclosures by testing the relationship between voluntary <IR> disclosure – and indirectly the implementation of integrated thinking – and a reduction in the cost of capital.

This study contributes to literature in financial and non-financial disclosures by introducing a theoretical discussion on Systems Theory, which states that to understand complex contexts the analysis of individual parts is not enough to understand the phenomenon and it is necessary to analyze it as a whole (Urry, 2005). The Integrated Report is a proposal that urges organizations to perform a holistic analysis of their business model and activities, demonstrating the connectivity and interdependence between capitals. Therefore, it is expected that users will gain a better perception of the organization when compared to a stand-alone disclosure.

Another point that justifies this research is that the economic benefits examined extrapolated prior research efforts, especially since cost of debt was not the object of inquiry in the verified literature. Using a global sample, García-Sánchez and Noguera-Gámez (2017) found a negative relationship between cost of equity and Integrated Reporting adoption. An investigation of the differences between the effect of Integrated Reporting on cost of equity and cost of debt, as well as how institutional factors and assurance affects this relationship, makes this a broader research effort, also contributing to the literature on CSR disclosure, and costs of equity and debt.

Using a cross-country sample, the companies that claimed to have adopted Integrated Reporting were identified, because that indicates an effort to establish a process of communication that includes the company's ability to engender value creation over time (IIRC, 2013) and involves the following: a holistic way to establish strategies, which takes into account all relevant aspects for conducting corporate activities; the establishment of a governance structure in which management commits to transparency and to the alignment of decisions with the pre-established strategy; an assessment of corporate performance that not only evaluates performance, but is also used as a parameter for setting goals and future planning; and a corporate perspective that considers environmental factors and relationships,

in order to better reflect on the potential impact of the organization in its society, including both financial and non-financial aspects (M. Cheng, Green, Conradie, Konishi, & Romi, 2014; IIRC, 2013).

An analysis of the relationship between CSR disclosure and cost of debt was performed, first to scrutinize the effect of integrated information, which was never explored before. Additionally, most of the literature focuses only in one of three aspects, namely bond market, interest rate or a single region (Goss & Roberts, 2011; Sharfman & Fernando, 2008; Ye & Zhang, 2011). In this research, however, both interest rate and credit rating were analyzed for a global sample.

In terms of institutional factors, this is the first study that we are aware of that investigated the effect of Enforcement of the Law, Societal Trust and Stakeholder Orientation, at the country level, in order to understand the economic benefits of Integrated Reporting. These institutional factors help to provide a more detailed view of how integrated disclosure affects companies, contributing to Integrated Reporting and CSR literature. Findings on this relationship contribute with new insights to the preparers of the information, as well as to users, and particularly to regulators. This can aid in identifying new mechanisms to support the Integrated Reporting initiative, potentially beneficial to all the society (Bae & Goyal, 2009; Cheung, Tan, & Wang, 2018; Chih et al., 2010; Dhaliwal et al., 2014; Nanda & Wysocki, 2011).

This research also improves on the literature about assurance, for which previous research efforts focused on the determinants of adopting CSR assurance and the choice of assurance provider (Casey & Grenier, 2015; Pflugrath, Roebuck, & Simnett, 2011; Simnett, Vanstraelen, & Chua, 2009). Specifically with regard to Integrated Reporting, Briem and Wald (2018) conducted interviews to understand the companies' motivations to adopt the assurance of non-financial information and the auditor's role in increasing the reports credibility and reliability. Building on that, this research contributes to expand the literature about the role of assurance in the relationship between Integrated Reporting disclosure and cost of capital, revealing differences between equity holders and debtholders, in addition to other specific characteristics of the institutional context.

This study's contributions also extend to the methodological approach employed. A robust method was used to analyze the economic benefits of <IR>, controlling for both "State" and "Time" perspectives. Companies that adopted Integrated Reporting were compared to non-adopters, having also compared their pre- and post-adoption periods. As far as we know, this

is the first study that employed this approach to understand the impacts of Integrated Reporting disclosure.

### *1.5 Dissertation Structure*

This chapter has briefly introduced the research through its contextualization, research justification, and expected contributions to the accounting literature. The second chapter will discuss the theoretical background that substantiates the hypothesis, the methodological approach, and the interpretation of the results obtained in this study. The third chapter will focus on the description of the methodological path chosen to address the research question and to test the proposed hypotheses . The fourth chapter will present data analyses of the economic benefits related to Integrated Reporting disclosure or, in other words, the cost of equity and cost of debt. And, finally, the fifth chapter will offer the concluding remarks.

## 2. LITERATURE REVIEW AND BACKGROUND

In this chapter we discuss the conceptual relationship between the adoption of Integrated Reporting and its resulting economic benefits, and the findings set forth by previous literature – specifically, whether equity and debt markets undergo changes as a consequence of <IR>.

Communication based on the conceptual Integrated Reporting framework cover non-financial issues, thus, generating a broader disclosure about the institution's performance with respect to aspects such as corporate social responsibility and intellectual capital management (James, 2013). The terms "non-financial information", "pre-financial information", "sustainability" and "corporate social responsibility" are employed to refer to information that applies the Integrated Reporting principles.

The terms "disclosure", "reports" and "Integrated Reporting" refer to all forms of communication made publicly available by the organization, but not necessarily a single reporting piece under a specific format.

### *2.1 Integrated Thinking and Reporting*

Integrated Reporting is a communication process used to demonstrate the company's ability to create value over time (IIRC, 2013). This proposal's differential does not stem from the publication of a new report, but rather the implementation of the concept of integrated thinking (Haji & Anifowose, 2016a), which states that the entire company needs to understand its business model (Carvalho et al., 2013). Individuals must know the impact of their decision on the process and how it will create, destroy or maintain value, while considering a holistic view that incorporates a varied capital structure. This awareness will help to introduce non-financial information in macro and micro decisions (Feng et al., 2017).

To identify the capital used or affected by the company, IIRC (2013) suggested the analysis of the following six capitals: financial, manufactured, intellectual, human, social and relationship, and natural (IIRC, 2013). Companies do not need to report all of the capitals mentioned, but are encouraged to make an active consideration of each, and identify which aspects are relevant to their business model, thus, driving management to evaluate the outcomes in a more comprehensive manner (Higgins, Stubbs, & Love, 2014).

The purpose of considering all six perspectives in the reporting is to encourage all actors involved in the decision-making process to think about which elements are used and impacted by the organization (IIRC, 2013). This will likely require the various departments of the

company to maintain contact with each other, thereby, establishing a better flow of information and a greater alignment among decisions, ultimately changing the so called silos in the firm (Feng et al., 2017; Lodhia, 2015).

This exercise of rethinking the way the company works provides a holistic understanding of the activities, triggering changes in a variety of ways. Some of these changes can include: (a) the definition of strategies in a broader form, given that it takes into account all aspects relevant to the fulfillment of the firm's activities (Cheng et al., 2014); (b) the establishment of a governance structure by which management is committed to transparency and to the alignment of decisions with previously defined strategies (Frías-Aceituno, Rodríguez-Ariza, & García-Sánchez, 2012); (c) approaching organizational performance assessments not only as a means for evaluating outcomes in a periodic manner, but also to be used as a parameter for goal-setting and future planning; and (d) the identification of challenges and uncertainties, keeping in mind environmental factors and relationships, in order to better capture the potential impact that the organization has on society, including both financial and non-financial aspects (Cheng et al., 2014; IIRC, 2013).

Integrated Thinking, therefore, helps in the identification of the resources used and affected by the activities of the organization, and its interdependencies and connectivity, including (IIRC, 2013, p. 2):

- The capitals that the organization uses or affects, and the critical interdependencies, including trade-offs between them;
- The capacity of the organization to respond to key stakeholders' legitimate needs and interests;
- How the organization tailors its business model and strategy to respond to its external environment and the risks and opportunities it faces; and
- The organization's activities, performance (financial and other) and outcomes in terms of the capitals – past, present and future.

All of these aspects lead the company to accomplish integrated communication, reflecting management practices and the way the company is perceived by all individuals within the organization. Disclosure is expected to be concise, nevertheless, the users should still be able to gain a holistic view of the organization (Serafeim, 2015).

In 2013, the International Integrated Reporting Council IIRC (2013) formally structured communications in an integrated way when it disclosed the Framework for Integrated Reporting. This document contains a principle-based approach that provides managers with directions for disclosure of Integrated Reporting, but also allows flexibility so that the company is able to represent its capacity of generating long term value (Velte & Stawinoga, 2017)

The proposition to apply the basic principles of Integrated Reporting aims to increase the quality of disclosed information, especially to capital providers. The point is to minimize information asymmetry and improve the forecast of future performance of an organization. The above mentioned principles are as follows (IIRC, 2013, p 5):

- Strategic focus and future orientation: An integrated report should provide insight into the organization's strategy, and how it relates to the organization's ability to create value in the short, medium and long term, and to its use of and effects on the capitals.
- Connectivity of information: An integrated report should show a holistic picture of the combination, interrelatedness and dependencies between the factors that affect the organization's ability to create value over time.
- Stakeholder relationships: An integrated report should provide insight into the nature and quality of the organization's relationships with its key stakeholders, including how and to what extent the organization understands, takes into account and responds to their legitimate needs and interests.
- Materiality: An integrated report should disclose information about matters that substantively affect the organization's ability to create value over the short, medium and long term.
- Conciseness: An integrated report should be concise.
- Reliability and completeness: An integrated report should include all material matters, both positive and negative, in a balanced way and without material error.
- Consistency and comparability: The information in an integrated report should be presented: (a) on a basis that is consistent over time; and (b) in a way that enables comparison with other organizations to the extent it is material to the organization's own ability to create value over time.

So far, the focus was on the potential benefits of adopting the Integrated Reporting, since this brings changes to the *status quo*. But, as in any proposal, Integrated Reporting has its limitations.

One of the criticisms, is that presenting information in an integrated way may make it harder to understand the information. Bucaro, Jackson and Lill (2017) found that investors value CSR information less when assessing Integrated Reporting, than when the information is in separate reports, due to the inherent difficulty in the <IR> disclosure. This study only considered the aggregation of information in a single document, without observing other aspects related to integrated thinking, or to its conciseness and materiality principles. There are also criticisms related to the specification of capital providers as the main users of this communication (Brown & Dillard, 2014; Milne & Gray, 2013).

Specifically related to the companies adopting Integrated Reporting, initial studies indicate that there is a rhetoric adoption, and also a bias to report positive aspects, without disclosing relevant negative ones. Despite that, it is important to consider the premature stage of the initiative, and that the evidence, in most cases, is restricted to the information of a single year (Ruiz-Lozano & Tirado-Valencia, 2016; Solomon & Maroun, 2012).

The main distinction, between Integrated Reporting and other corporate disclosures reverts to the basic principles proposed by the IIRC (2013). As demonstrated by Ruiz-Lozano and Tirado-Valencia (2016), companies that initially adopted the initiative are applying the principles proposed in the framework, but not completely, due to the early stages of the initiative. They point out that among the companies analyzed “strategic approach to information and the relationship between capitals in the process of value creation seem to have a high level of monitoring (Ruiz-Lozano & Tirado-Valencia, 2016, p. 258).”

The holistic analysis proposed by the IIRC (2013) has the potential to bring benefits for both internal and external users, as a result of the exercise to understand the whole context of a company’s activities and interrelations. System Theory states that the analysis of the parts of a complex problem is different from the analysis of the whole system, and the latter leads to a better overall understanding: “It is not that the sum is greater than the size of its parts – but that there are system effects that are different from their parts (see Jervis, 1997, on system effects). Complexity examines how components of a system through their interaction ‘spontaneously’ develop collective properties or patterns (Urry, 2005, p 5).”

The analysis proposed by IIRC considers the complexity of enterprise management. Thus, the Integrated Reporting initiative encourages managers to analyze the system that involves the company's activities, which can generate an improvement in the management of multiple capitals. The internal changes will be reflected in the process of producing information, which can consequently lead to a decrease in information asymmetry.

This study, therefore, focused on the following three aspects of the Integrated Reporting proposal: connectivity; interdependency of all factors that the organization uses and affects; and other aspects closely linked to the strategic approach, specially the definition of materiality and long-term value creation. By applying these principles, it is possible to reduce information asymmetry and meet the informational need of multiple stakeholders, with the added possibility of achieving economic benefits for the organization (Frias-Aceituno, Rodríguez-Ariza, & García-Sánchez, 2014; Roberts, 1992).

### *2.1.1 Connectivity and Interdependencies of Factors*

The principle of connectivity of information builds up from the concept of integrated thinking, stated by the IIRC (2013, p 33) as: “The active consideration by an organization of the relationships between its various operating and functional units, and the capitals that the organization uses or affects.” Incorporating this concept into the activities of the company,

requires the management to consider all of the six capitals in the company's strategy, taking into consideration how they impact each other and the interdependencies that result in the creation, maintenance or destruction of long term value. After its incorporation into the strategy, the concept will be reflected in the management of performance, in the decision-making process of all organizational levels, and in the control system (Busco, Frigo, Riccaboni, & Quattrone, 2013; Schaltegger & Burritt, 2010; Velte & Stawinoga, 2017).

The understanding of the business model by all stakeholders is one of the aspects that contribute to the dissemination of integrated thinking throughout the company (Eccles & Krzus, 2010). This is usually achieved when management defines its business strategies in a more holistic way and develops a more sustainable attitude. The administration must consider all relevant capitals that are used or affected by its operations, understand the results that can be obtained in the long run, and identify the necessary investments to attain them (Eccles & Krzus, 2010; Feng et al., 2017).

To verify the understanding of the integrated thinking concept by the IIRC stakeholders, Feng et al. (2017) interviewed accounting professionals in companies that adopted the Integrated Reporting and IIRC members in Australia. They did not reach a consensus about the definition of integrated thinking, but they highlighted some key aspects from the definition contained in the framework, such as breaking the operational silos to facilitate the communication between corporate divisions. Nevertheless, one of the participants criticized this trait because he perceived advantages in the departmentalization of organizations.

Despite this perception, the framework does not necessarily imply the dissolution of departments, but the improvement in the information flow and a holistic understanding of the activities, the employees' understanding of their role in the context of the organization as a whole, and their knowledge of how the organization, as a whole, influences their activities. Additionally, these organizations' initial experience suggests the need to create an Integrated Reporting committee that includes representatives from various departments, in order to fully consider their corporate results, strategies and perspectives (Feng et al., 2017).

Based on the interviews, Feng et al. (2017) also point out all employees need to be engaged so that every individual may understand the company in the same way, focus in the financial and non-financial results, and understand the interdependencies of resources and factors that make up their business model. Other respondents see the integrated thinking as a way to measure the Integrated Reporting and relate it to the concept of organizational culture.

As the integrated thinking permeates the business, it is expected that decisions and actions in all parts of the company will consider the interrelationships and connections between factors,

improving the process of value creation in the short, medium and long term (Busco et al., 2013; IIRC, 2013). Integrated thinking helps to understand how the capitals are represented in firm's strategy.

In a study by Haji and Anifowose (2017), the initial practices by South African companies in compliance with the mandatory Integrated Reporting disclosure (between 2011 and 2014) were analyzed. The results indicated that the companies increased the total amount of information (quantity) related to Corporate Social Responsibility, showing an increase in the intellectual and human capital category, and a decrease in the relational capital category; nevertheless, relational capital was the category with the most information (Haji & Anifowose, 2017). On the other hand, only a few companies (19% of the 82 companies analyzed in 2013) disclosed the interdependencies and trade-offs between capitals, mostly showing generic information, to recognize that there are interdependencies between the capitals, or just mentioning the inclusion of multiple capitals in the business model (Haji & Anifowose, 2017).

In the same vein of Haji and Anifowose (2017) who identified limitations in the integration between capitals and in other elements of the disclosure of companies that adopted the Integrated Reporting, Stent & Dowler (2015) analyzed the 2011 reports of four companies from New Zealand, which were considered the companies with the best report practices. One of them engaged in the IIRC pilot program and the other three won the The New Zealand Institute of Chartered Accountants (NZICA) Leadership Awards, in 2011, recognizing them for their best practices in the development of their Annual Reports. The authors point out that "current reporting processes lack the integration, oversight and due attention to future uncertainties required by IR." (Stent & Dowler, 2015, p. 92).

Consistent with these research efforts, Zappettini and Unerman (2016) point out that the Integrated Reporting initiative seeks to incentivize corporations to include sustainability issues in their business model, and from that, attain changes in their activities. Through the analysis of 34 reports from 16 companies that disclosed at least two reports on the IIRC website up to 2013, they concluded that the integrated thinking concept is still incipient and, most of the time, the term Sustainability was used to indicate economic and financial aspects (Zappettini & Unerman, 2016). These findings demonstrate that companies were still not applying the integrated thinking concept, although the authors did point out that their disclosures occurred before the IIRC's Integrated Reporting framework was made public.

### *2.1.2 Materiality*

Investors seeking socially responsible investments need a broader set of information than just the financial results of an organization. A research conducted by EY Global Limited (2015) identified that approximately 62% of the institutional investors interviewed considered that non-financial information is relevant; only 37% of them, however, use some kind of methodology or table for the evaluation of non-financial information. The majority of investors use non-financial information for decision-making, but the lack of a systematic structure increases the possibility of biases in decision-making; these biases can result from heuristics, a characteristic inherent to decisions of all people (Tversky & Kahneman, 1985).

Tversky and Kahneman (1985) point out that framing of the content is a problem for the decision maker. Their study demonstrated that the way in which problems are formulated could change the perception, evaluation of probabilities, and results of the decision-making process.

Conventional annual reports prepared by different companies have been criticized for being lengthy, a problem that can stem from a frame issue that jeopardizes the document analysis. The majority of these reports contain more than 200 pages, and provide a set of unnecessary information (Hellmann, 2016; KPMG and Financial Executives Research Foundation (FERF), 2011). These presentations may distract the users from important issues that should be considered, if not for the information overload.

The corporate disclosure resulting from a process of Integrated Reporting has to observe the principles of materiality and conciseness, among others (IIRC, 2013). Considering the many definitions for materiality, IIRC started an effort to unify the definitions in the Corporate Reporting Dialogue encompassing the many concepts of materiality. The proposed definition characterizes materiality as relevant information, or, in other words, information that is reasonably capable of making a difference for an adequate evaluation of the issue at hand, so it follows that the immaterial information is the one that cannot and does not make a difference.

Companies adopting the Integrated Reporting are expected to reduce the amount of information disclosed, but, at the same time, commit to disclose every relevant information to the users. Additionally, in order to make an informed investment decision, investors should be able to more easily understand the relevant aspects of the organization's activities and performance, including a deeper understanding of the Corporate Social Responsibility (CSR).

Integrated Reporting aims to offer information that helps users perceive the reconciliation between the company's market value and accounting value (IIRC, 2013). It is still early to identify a set of information that is sufficient to understand this gap, but there are many initiatives that attempt to solve this issue, especially because the asymmetry of this information asymmetry can generate possible miscalculations in the assessment of risk, and in the analysis of perspectives and future cash flows (Alwert, Bornemann, & Will, 2009).

A concise and material disclosure can aid investors in mitigating problems related to information overload (Bazerman & Moore, 2009), and limited attention spans and/or processing power (Hirshleifer & Teoh, 2003).

Another criticism to this disclosure has to do with the conflict between maximization of value for the investors and the adoption of social responsibility practices, or investments directed to employees, consumers, local community, environment and others, which, in some companies, generates negative financial results (Renneboog, Ter Horst, & Zhang, 2008). Therefore, by manipulating the items disclosed, material disclosures can be used as an instrument to manage the image of the organization, not necessarily corresponding to the its performance (Renneboog et al., 2008).

In highly regulated financial reports, management can highlight favorable performance items and hide unfavorable elements. For instance, excessive emphasis on positive results is a common strategy used by management to make sure that corporate performance is seen in the best possible light, or that it is complying with the rules or expectations (Merkl-Davis e Brennan, 2011).

Clatworthy and Jones (2003) provided evidence of such practices. They showed that a significant part of CEO statements in the United Kingdom is dedicated to positive news. With financial reports now being published in the companies' websites, this issue is becoming significantly more important. With the multidimensional possibilities of the internet, companies can analyze emotive elements, such as design, color, and music, to gain exponentially greater power to influence decision makers, as opposed to the bidimensional format of the traditional annual report.

Within the process that identifies the relevant information it is important to minimize the above mentioned problems. Stakeholder involvement can help to reduce the effect of such discretionary manipulation by management. Additionally, stakeholder involvement has the potential of providing legitimacy to the materiality analysis performed by the company (Manetti, 2011).

The process that identifies relevant information is far more challenging in the context of non-financial information than for financial information. The definition of materiality as applied to financial information, which implies quantitative criteria, cannot be applied to non-financial information, because, usually, the latter does not use the same units, and a big number does not necessarily represent an important issue to decision-making. Furthermore, there are non-financial matters that are relevant to the company, but cannot be measured or there is no methodology in place to measure it (Fasan & Mio, 2016; Khan, Serafeim, & Yoon, 2016).

The difficulties in the process of defining materiality and selecting the issues to be included in the corporate reports can be minimized by engaging the stakeholder in the defining process (Fasan & Mio, 2016).

Yet another criticism to this process of determining materiality when implementing Integrated Reporting comes from the possibility that companies can use the initiative to incorrectly exclude important information from investors. Van Bommel (2014) highlights the importance of a strong commitment to the integrity of the initiative, because it is possible that a company and its accountants may use certain mechanisms to further their own interests, compromising clarity of information with ambiguities, which will result in a illegitimate report that does not comply to the IIRC's framework.

Mitigation of this issue is, again, to involve the stakeholders in the definition of materiality. Manetti (2011) points out that discussions about interactive relationships, in a Stakeholder Theory context, state that management and interested parties should adopt a transparency and accountability approach. In such relationships, stakeholders committed to the organization can take part in the process of decision making as participants in the management of the business by sharing information, dialoguing and creating a model of mutual responsibility (Manetti, 2011).

Khan, Serafeim and Yoon (2016) studied how certain aspects of sustainability can vary in importance according to the company's characteristics, especially between industries. Using the Sustainability Accounting Standards Board (SASB) framework related to material information by industry, the study analyzed the disclosures in order to identify the effects of sustainability disclosures on stock returns. The authors discovered that the highest ranked companies in terms of materiality disclosure had a superior performance than companies that were lower ranked in the same category.

The materiality principle requires that companies disclose all key information to decision makers, and, in that context, Integrated Reporting focuses primarily on the needs of the capital providers. The process of defining materiality is important in order to make sure that

unnecessary information is not released, otherwise, it would require a lot more time for the user to consider all the information, diverting their focus from items that really need to be analyzed (IIRC, 2013; Khan et al., 2016; Steenkamp, 2018).

Thus, it is expected that user participation in the process of selecting content to be made available in the company's disclosure is a positive practice, since it allows them to understand the process of creating value for the company. Some factors that can contribute to the credibility of the materiality definition process include: involving the stakeholders, keeping the board accountable and other governance tools (Fasan & Mio, 2016; Manetti, 2011; van Bommel, 2014).

### *2.1.3 Sustainability Over Time*

According to Rachlin (1989), to attain a collective moral character requires an environment that embraces rules of self-control and ascribes responsibility to each individual. A structure with such rules can induce individual decision makers to consider long-term returns and prevent impulsive choices. Additionally, the more responsibility a person is given, the more they tend to adopt a helping attitude towards others. For instance, a higher sense of responsibility is correlated with the choice of becoming a volunteer to donate bone marrow. Schwartz (1973) and Schwartz and David (1976) determined that individuals with higher personal standards have a higher probability of engaging in pro-social behavior, becoming volunteers, or assisting others.

Engaging people to accept more responsibility and abide by the rules of self-control can only happen as a result of a process that will induce change in many individuals. This perspective can be exemplified by Socially Responsible investment initiatives that can be characterized as a step towards an environment of self-control, in which investors are susceptible to accept a suboptimal financial performance in order to attain social and ethical objectives (Zwanziger & Melnick, 1988).

Accounting plays an important role in this scenario by providing information about long term perspectives so the investor can assess the performance of the organization and identify if values and practices are aligned with their interests. Still, the current model faces criticism.

According to a study by Beattie, Dhanani e Jones (2008), in which they undertook a comparative analysis of annual reports from English companies, between 1965 and 2004, corporate reports have gone through many changes. Their results indicate an increase in the length of the reports, and also in the disclosure of voluntary information and narrative

information. They identified the greater use of graphic elements in the majority of the reports, but also highlighted the possibility that, to improve the perception of the results, there's been lack of neutrality in selecting the items to be emphasized, such as changes in the scales of the graphics and manipulation of the number of years included in the temporal series. This evidence shows that more information does not imply a better quality report.

Additionally, regulations addressing narrative information are not well structured and, so far, there's been no effective way to control this type of information disclosure. The opposite is true for quantitative information, especially financial, which has a much larger set of parameters and standards (IASB, 2010). Consequently, narrative accounting disclosure depends on the discretion of management, which leaves it open to the possibility of opportunism.

To deal with this issue, Integrated Reporting is an initiative that aims to help organizations demonstrate their capacity for value creation in the short, medium and long run. The main objective of Integrated Reporting is to increase the quality of disclosure to providers of financial capital, reducing informational asymmetry and, consequently, providing for a more efficient allocation of capital (M. Cheng et al., 2014; IIRC, 2013).

Corporate Reporting contains limited information about the long term horizon (Melloni, 2015). Information that is oriented for the future allows the disclosure of potential value creation through strategy and future prospects (Abhayawansa, 2014). Prior research indicates that companies restrictive about disclosing future oriented information, even when they are relevant to understanding corporate results (Cinquini, Passetti, Tenucci, & Frey, 2012; & Bontis, 2007; Melloni, 2015).

Melloni (2015) performed an analysis of 54 reports, and only about 12% of the information included future perspectives, while 88% focused on historical information or information without a specific time frame. The sample included companies that disclosed data in the IIRC database until May 2014.

In a study by Stent and Dowler (2015), all four companies analyzed disclosed their strategic objectives and implementation plans, but only two disclosed the period in which they intended to attain the objectives (one expected it in four years and the other in nine years).

Identifying all the elements of the business model, using the six capital perspectives, is an exercise that can bring more control as well as a need to manage new issues, such as the management of risks and opportunities related to each capital and their interdependencies (IIRC, 2013). This practice may reduce investors risk perception of the company's future cash flows (Sharfman & Fernando, 2008). Risk management should decrease the probability and,

consequently, cost of unexpected events, and make it more difficult for managers to alter the company's risk exposure (T. S. Campbell & Kracaw, 1990; Smith & Stulz, 1985). These factors should reduce the risk premium demanded by investors and contract conditions required by lenders, including creditors that carry lower interest rates and have fewer investment restrictions (Campello, Lin, Ma, & Zou, 2011; Sharfman & Fernando, 2008).

#### *2.1.4 Integrated Reporting Metrics*

As mentioned earlier, Integrated Reporting is principle based and, using the IIRC framework, there are different ways to disclose a company's information, ways that can result in documents with different content and format (de Villiers, Rinaldi, & Unerman, 2014). This poses a challenge to researchers who need to identify the companies that actually adopted Integrated Reporting and applied the principles proposed by the framework. Following several research efforts, the sample used in this study was composed of companies that were self-declared adopters of Integrated Reporting and either published their reports in the IIRC database or self-declared to the GRI (Global Reporting Initiative) that they adopted Integrated Reporting (Lai, Melloni, & Stacchezzini, 2016)

Prior literature suggested several ways to address this issue. Many studies analyzed the effects of adoption on South African companies listed in the Johannesburg Stock Exchange (JSE), where companies are legally obligated to publish integrated reports, in a comply or explain setting (IoDSA, 2018; Johannesburg Stock Exchange, 2016). The investigations by Baboukardos and Rimmel (2016), Zhou et al. (2017), Rambe and Mangara (2017), Haji and Anifowose (2016) and Barth et al. (2017) analyzed only companies that mandatorily adopted Integrated Reporting, while this study aimed to verify the economic benefits brought by the voluntary adoption of Integrated Reporting. Prior studies are restricted to the Johannesburg Stock Exchange companies, as highlighted by Barth et al. (2017), so the findings refer to a small sample and limited to only one country, a fact that constrains the generalization of results. Additionally, the investigation by Barth et al. (2017) did not present the metrics used to evaluate the reports, which prevents an analysis of internal validity and the replication of the study.

The study conducted by Baboukardos and Rimmel (2016) also restricted the sample to companies listed in the Johannesburg Stock Exchange, and controlled the pre-adoption and post-adoption periods to analyze the effects under observation.

In the same vein, Zhou et al. (2017) used a sample of JSE listed companies, from 2009 to 2012, and applied a self-constructed instrument to evaluate the “level of alignment of an integrated report with the <IR> framework,” in order to analyze the relationship between Integrated Reporting, analysts’ forecast errors, and cost of equity.

A study by Barth et al. (2017) aimed to identify the relationship between the quality of Integrated Reporting, and the liquidity of stock and firm value. Its sample was comprised of the biggest 100 companies in the Johannesburg Stock Exchange (JSE). The compulsory requirement for Integrated Reporting disclosure has been in place since 2010 and this is the sole group of companies that adopted this type of disclosure for mandatory reasons.

The proxy for quality of Integrated Reporting was based on private information collected for the EY Excellence in Integrated Reporting Award, which, since 2011, analyzes the reports of the 100 biggest companies listed in the JSE according to criteria stipulated by the Framework for Integrated Reporting developed by the IIRC. The specific criteria was not disclosed by Barth et al. (2017). According to the organizers of the award, the metrics not only take into consideration the compliance of the suggested items in the IIRC Framework, but also encompass an analysis of relevance, understandability, accessibility and connectivity of information. Such statement implies that the organizers verify compliance to the framework, and perform a qualitative analysis of the report.

Rambe e Mangara (2017) analyzed 106 South African companies listed on the JSE to determine the influence of the combination of the Integrated Reporting ratings, and the companies’ CEOs’ age and years of experience on their share price ; as was the case in the Barth et al. (2017) study, the methodological procedures of the Integrated Reporting rating was not disclosed.

A study developed by Haji and Anifowose (2016) used the principles of Integrated Reporting as the basis for creating an evaluation metric for Integrated Reporting <IR>. The authors developed a checklist based on the practices observed in the reports, and on the <IR> orientations issued by the IIRC and by the local regulator (King Code III).

Other authors chose to develop a metric based on the content elements or guiding principles of the IIRC in order to evaluate the way companies are presenting their Integrated Reporting. The authors and what they evaluated are as follows: Veltri and Silvestri (2015) evaluated one university, Ruiz-Lozano and Tirado-Valencia (2016) analyzed the reports of 21 companies, Melloni (2015) analyzed 52 reports, Stent and Dowler (2015) compared the reporting practices of four New Zealand companies, Melloni, Stacchezzini and Lai (2016) analyzed the tone of the disclosure in 54 reports, and Kılıç and Kuzey (2018) evaluated the reports of 64

Turkish companies. Content analyses can identify interesting aspects of the disclosure, however, because of the subjectivity of the analysis, it is very difficult to replicate, demands a lot of effort and the results are difficult to generalize, all of which results in a smaller sample size (Kolbe & Burnett, 1991).

Veltri and Silvestri (2015) developed a case study by applying a content analysis to a South African university's Integrated Reporting. The categories analyzed were the content elements of the IIRC framework (2013). The authors found that all elements were in the report but were only superficially covered. They also used the basic IIRC Framework (2013) Integrated Reporting principles as categories for the analysis. What they found was that, although most of the principles were addressed, they were not discussed with enough depth. These findings show how critical it is to advance discussions about this topic and to improve the current initiatives for developing Integrated Reporting.

A study conducted by Ruiz-Lozano and Tirado-Valencia (2016) analyzed the reports of 21 industrial companies participating in the Integrated Reporting Pilot Project to determine their compliance with the principles of <IR>. The content analysis was based on the seven principles stipulated by the Framework. The principles were further divided into 32 items, also based on the Framework, and each item was analyzed by two researchers, who assigning weight 0 to items not reported by the companies, weight 1 to insufficient information, and weight 2 for information sufficiently explained. This methodology could be criticized for having used a variable that is considered by researchers as qualitative, since it reflects 3 categories defined by the authors, as a quantitative variable. There is nothing to establish that the breadth of quality between reports that received a 0 and a 1 is the same as the breadth between reports that received a 1 and a 2 (Fávero & Fávero, 2015).

With a focus on the disclosure of capitals, Melloni (2015) analyzed 52 reports, available through the IIRC database, up to 2014, classifying them according to the 6 capitals, and then by the following linguistic attributes: temporal orientation (future oriented or not future oriented); type of evidence (quantitative or not quantitative) and tone (positive or not positive). Companies were classified as oriented to the future if they disclosed prospective information about the company's future, strategy and expectations, and as not future oriented if the report focused solely on past and present information. Quantitative referred to disclosures of numerical information, including monetary and non-monetary. And, finally, the tone of the publication was considered positive if the report provided good news for the company or the operating environment, and not positive when the disclosure was neutral or negative. Results indicated that a focus on intellectual capital appeared in the disclosures

related to the social and relational capitals, whereas the disclosure of qualitative or future oriented information were limited.

Stent and Dowler (2015) analyzed the 2011 reports of 4 New Zealand companies to determine the companies with the best reporting practices. One of the companies was part of the pilot program developed by the IIRC, and the other 3 won the The New Zealand Institute of Chartered Accountants (NZICA) 2011 Leadership Awards, which recognizes good disclosure practices in their annual reports.

Starting with all reports available in the IIRC database in 2014, Melloni et al. (2016) set out to analyze the tone employed by companies when describing their business model, and discovered that 54 companies had information about their business model.

Kılıç & Kuzey (2018) analyzed 64 reports from companies listed on the Borsa Istanbul, the Turkish stock exchange, using a metric based on the content elements proposed by the Integrated Reporting Framework (IIRC, 2013).

For this study, it was determined that a cross-country set of companies should be identified, specifically, self-declared Integrated Reporting adopters that attempted to implement the integrated thinking concept and, as a result, disclosed sustainability information connected with financial information. First, companies that uploaded their report to the IIRC examples database (IIRC, 2017) were identified. These companies were sought out because uploading their report signaled that they at least tried to follow the principles of the Integrated Reporting Framework developed by the IIRC (2013). The procedures to identify the samples were based on studies that used the IIRC examples database as their object of analyses (Churet & Eccles, 2014; Mervelskemper & Streit, 2017) or as a source to identify their dataset (Lai et al., 2016; Melloni, 2015; Melloni et al., 2016; Mio & Fasan, 2013; Ruiz-Lozano & Tirado-Valencia, 2016).

As a complementary analysis, it was decided that companies that were self-declared adopters of Integrated Reporting in the GRI Sustainability Database would also be used. GRI is a platform that collects information about all sustainability and integrated reports it was able to identify, and may include companies that apply the GRI Guidelines (GRI, 2017) or not. This information was used for this study in alignment with Mervelskemper and Streit 2017, and Sierra-García, Zorio-Grima and García-Benau (2015).

García-Sánchez, Rodríguez-Ariza and Frías-Aceituno (2013) analyzed the determinant factors for the adoption of Integrated Reporting, using the information from Integrated Reporting adopters that was available in the GRI Sustainability Database. Their study examines the impact of local stakeholder values – collectivism, feminism, tolerance to uncertainty, long

term orientation and the broadness of hierarchical levels (García-Sánchez et al., 2013) – all based on Hofstede's national cultural system as applied to the adoption of Integrated Reporting when compared to other disclosures. The sample comprises 1,590 companies selected from the 2,000 biggest companies in the world as determined by Forbes Global 2000. Results indicated that companies in societies with stronger values of collectivism and feminism show higher adoption of Integrated Reporting. Long-term oriented countries showed a positive coefficient, but no statistical significance.

## ***2.2 Economic Benefits***

This section encompasses the theoretical discussion of the relationship between the disclosure of information using the principles of Integrated Reporting and its possible economic consequences. It describes how the adoption of Integrated Reporting can lead to the reduction of informational asymmetry, and affect the cost of equity and debt in different ways (Barth et al., 2017).

As pointed out by Holthausen and Leftwich (1983) and Zeff (1978), the analysis of the "economic consequences" and "economic benefits" of the information disclosed by the companies covers the effects of the disclosures on any economic variable used to determine the wealth of capital providers and others affected by its decisions; in this study, however, only cost of equity and cost of debt are analyzed.

Classical economics literature points out that investors seek maximization of wealth. That notwithstanding, observations of decision making show behaviors that do not completely follow such proposition. There are investors that, along with wealth maximization, also value social aspects (Renneboog et al., 2008).

This, among other factors, encouraged organizations to disclose non-financial information, which generally pertains to social and environmental activities. since 2005, the number of companies that disclose their annual report showing financial and non-financial information increased (KPMG, 2015). Despite the observable progress, Eccles and Krzus (2010) admonish that the information is provided in a disconnected way, generally in individual blocks, a characteristic that hampers the effort to identify the engagement of sustainable management with the organization's strategies.

The creation of Integrated Reporting aims to encourage organizations to restructure their disclosures through a process called "Integrated thinking"; in other words, to ingrain the financial and non-financial relevant aspects into the decision-making process, to be driven by

the organization's objectives, and not just the financial results of the current period (Haji & Anifowose, 2016b).

With the implementation of the integrated thinking concept in organizations, the proposers expect a consequent change in the communication with its stakeholders. The proposal is to structure and present information in a more aligned way, minimizing differences in the discourse of the many reports prepared by the company (PWC, 2013). Another consequence should be a higher clarity in the monetization of the organization's sustainability aspects, that is, cost statements, cost of opportunity, and future benefits of projects or other aspects. Thus, it seeks to reflect the relationship and interdependencies between the social, environmental, intellectual and other aspects, and the financial performance, while, at the same time, providing users with more information to forecast the organization's future performance. These practices should decrease the uncertainties related to the company's performance (Haller & van Staden, 2014; International Integrated Reporting Council IIRC, 2013).

In essence, two are ways in which Integrated Reporting disclosure can lead to economic benefits: it minimizes information asymmetry and, due to an improvement in sustainability performance, it reduces the investors' estimated risk. Benlemlih (2017) and Botosan (2006) conducted research efforts that indicate a relationship between economic benefits, and corporate disclosure or disclosures of sustainability. In it, they found two components: the first argues that the reduction in the cost of capital is a result of the reduction in information asymmetry and transaction costs; the second suggests that an improvement in management practices leads to a reduction in the perception of risk. Specifically related to the integrated report, risk reduction may be associated to a better understanding of the business model, resulting in a continuous improvement of the financial and non-financial aspects (due to the integrated manner in which they are analyzed), coupled with a focus on value creation in the short, medium and long term. Additionally, the risk can be reduced due to a greater transparency that leads to an improvement in sustainability performance.

### *2.2.1 Voluntary Disclosure Theory*

Companies face different pressures and react through a multiplicity of actions, including the publication of information about their management, interaction with the environment, and use of resources. The Voluntary Disclosure Theory supports the reasoning behind the voluntary disclosure of information, as is the case with companies that have adopted Integrated Reporting <IR>. The model developed by Verrecchia (2001) characterized the disclosure in

three groups: Association-Based Disclosure – identifies the association between disclosure and market variables; Efficiency-Based Disclosure – the disclosure will be made independently of the performance as a form of self-assessment seeking to improve performance; Discretionary-Based Disclosure – represents the discretion employed by managers in their decision to disclose information. This research addresses the association-based disclosure approach, seeking to identify the relationship between integrated disclosure and economic benefits.

Previous studies analyzed the relationship between voluntary disclosure and the market value of the company. Daske et al. (2008), Diamond and Verrecchia (1991) and Verrecchia (2001) argue that, in capital markets, voluntary disclosure reduces informational asymmetry, leading to an increase in market liquidity and, consequently, a reduction in the cost of capital. Certain research efforts have identified a negative relationship between voluntary disclosure and the cost of capital, a fact that may indicate that investors require higher compensation in situations in which they have less information, since this increases transaction risks (Botosan, 1997).

The implementation of Corporate Social Responsibility disclosure practices is concerned with intellectual, human and environmental capital, among others, which can provide a broader view on the performance and perspectives of organizations. Providing users with more relevant information about its operations, potentially better quality information that increases transparency, may change the market's perception about the organization's results and the uncertainties involved in their activities (Barth et al., 2017).

Increasing the dissemination of integrated information can reduce information asymmetry. Information asymmetry occurs when one of the transaction parties has an advantage of knowledge in relation to the other, a problem that can be divided into two parts: adverse selection and moral hazard (Scott, 2012). Adverse selection occurs when one transaction party, for example, the management or the majority investors, has more information about the current and future status of the organization than other stakeholders, creating an advantage that can be used to reduce one of the parties' decision-making skills (Scott, 2012).

In an information asymmetry scenario, less informed investors face disadvantages in negotiations with other private and better-informed investors. As exemplified by Glosten and Milgrom (1985), the less informed investor believes that he can negotiate with an investor who has better information, but, due to his lack of information, he is afraid to carry out the transaction at the market price because the other party may know if the current price is

advantageous. This results in the reduction (increase) of the price that one is willing pay to buy (sell), as a precautionary measure against well-informed parties.

Moral hazard refers to the difference in knowledge between the transaction parties with respect to actual behavior, especially management's, and the inability to verify that their actions are aligned with the principal's interests, after a transaction (Scott, 2012).

According to Scott (2012), management is encouraged by the capital market to increase the value of the company, be it to gain reputation or due to contractual considerations. Disclosure reduces the risk of adverse selection and risk of estimation, increasing investor confidence, and raising the expectation of achieving benefits such as increases in the share price and decreases in the cost of capital. Thus, it creates incentives for management to make disclosures to the market. The purpose of Integrated Reporting is not only to help in the dissemination of more elements, especially with respect to existing connections and interrelationships between the resources that are used or affected by the organization, to provide them in a way that facilitates understanding (being more concise, material and holistic), allowing for the reduction in information asymmetry and the realization of benefits linked to this phenomenon.

### *2.2.2 Information Asymmetry*

Studies demonstrate how the quality of disclosure and the disclosure of Corporate Social Responsibility information reduce informational asymmetry (Benlemlih, 2017; Souissi & Khlif, 2012).

Empirically, studies have gathered evidence that increasing the quality of information and improving the reporting of an organization lead to minimizing problems of adverse selection and estimation risks (Daske et al., 2008).

The adverse selection mechanism and information asymmetry may induce a reduction in the number of stocks that a less informed investor is willing to negotiate. Consequently, it is expected that market liquidity will be reduced, affecting the ability to quickly buy or sell shares at a price close to the market average (Christensen et al., 2013).

Amihud and Mendelson (1986) analyzed the impact of illiquidity on asset pricing. Lack of liquidity is represented by the cost of immediate execution of an asset, which requires a premium to fulfill; in other words, an investor who does not want to wait to carry out a transaction at a moment in which the price is favorable can force the transaction, thereby generating a premium for its immediate execution (Amihud & Mendelson, 1986). Therefore,

in a transaction, the metrics used to calculate liquidity of shares refers to the difference between the offered and required prices (known as the bid-ask spread); in essence, it is the difference between the highest value the buyer is willing to pay and the lowest value the seller is willing to receive (Amihud & Mendelson, 1986).

The results of the above study indicate that the average return of a risk-adjusted portfolio has a positive correlation with respect to the bid-ask spread, or the illiquidity of the assets. Therefore, when dealing with assets, there is an increase in the difference between demanded and offered amounts due to uncertainties generated by the lack of information.

Considering such results, Amihud and Mendelson (1991) argue that companies have incentives to voluntarily disclose information (whatever its nature) that influences the valuation process, given that the chance that an internal investor may have more information induces other players in the market to increase the bid-ask spread. Therefore, an improvement in the information disclosure process can reduce the risk of negotiations with more informed investors, thereby reducing the bid-ask spread, increasing liquidity, and reducing the cost of equity and the cost of debt (Amihud & Mendelson, 1991).

Empirical results, provide a wide body of evidence that support the argument that voluntary disclosure reduces information asymmetry, and can lead to an increase in liquidity and a reduction in the cost of capital (S. Y. Cho, Lee, & Pfeiffer, 2013; Christensen et al., 2013; Cui, Jo, & Na, 2016).

### *2.2.3 Stakeholder Theory*

The application of the principles of Integrated Reporting is linked to the company's relationships with its stakeholders, thus, other theories help to support the relationship between voluntary disclosure of Integrated Reporting and economic consequences. Stakeholder Theory discusses the actors related to the organization and promotes a reflection on how the organization's decisions influence these audiences, and how, in turn, the organization is directly or indirectly influenced by these actors (Manetti & Toccafondi, 2011). Stakeholders Theory supports the view that the company has benefits that stem from greater engagement with its stakeholders. Attending to these actors brings new visions about how the company should perform its activities, improves risk management and reduces risks of litigation. Accordingly, such engagements help the company with its prospects of continuity and long-term success (Roberts, 1992; Simnett et al., 2009; Ullmann, 1976).

Based on Ullmann's (1976) theoretical proposal, Roberts (1992) presented evidence that non-financial disclosure is one of the activities that companies undertake in order to manage stakeholders. Both authors showed that disclosures vary according to stakeholder power, strategy posture, and economic performance. In essence, the Integrated Reporting disclosure can be partially explained by the necessity of some companies to improve its relationship with their stakeholders.

The adoption of integrated thinking can bring benefits to all related parties, as well as generate changes in the decision-making model, by focusing on long-term goals and considering multiple perspectives. Therefore, the adoption of Integrated Reporting can generate changes within the organization, which lead to the strengthening of its relationship with the stakeholders and, ultimately, economic benefits.

### ***2.3 Cost of Equity***

Prior literature intensely investigates the relationship between corporate disclosure and cost of equity (Souissi & Khlif, 2012). Some theoretical models indicate a negative relationship between voluntary disclosure and the cost of equity. Merton (1987) proposes that increasing the information available in an incomplete information environment tends to expand the investor base and lower the cost of equity. Therefore, engaging in Integrated Reporting <IR> can increase awareness of the firm's existence and decision-making process, and can reduce the information asymmetry, which can lead the company to achieve economic benefits. Among these benefits, Merton (1987) highlights an increase of the investor base, and Botosan (1997) and Healy and Palepu (2001) emphasizes a reduction in the cost of equity.

Asymmetry of information between managers and investors can result in uncertainties about the future of the company and make it more difficult for investors to make predictions about the results of the organization (Botosan, 1997). Investors prefer lower risk stocks, or stocks that have less uncertainties about future returns and dividends. When making an investment decision, individuals are expected to consider whether they have acceptable levels of information about the business model, risks and opportunities inherent to the activities of the organization; if not, they should require an adverse selection risk premium (Akerlof, 1970; Hail, 2002). Merton (1987) points out that information asymmetry is positively related to the risk premium demanded by investors, since the allocation of capital will occur without the party having all the necessary elements to make a decision. Healy and Palepu (2001) note that

the greater the asymmetry of information, the greater the monitoring costs for an institutional investor. Thus, disclosure plays an important role in this relationship.

Research involving Corporate Social Responsibility (CSR) accounting encompasses several aspects that can be influenced by an organization's disclosures. Anderson and Frankle (1980) identified that the disclosure of social information may increase the company's stock price, indicating that the market is aware of CSR content in disclosures. The authors used "Iso-Beta Portfolio Analysis" to compare a group of companies that disclosed social information to a group of non-disclosing companies with the same level of risk, and the results may indicated a lower cost of equity for the first group. Griffin and Sun (2013) verified that voluntarily disclosed Corporate Social Responsibility information, specifically about greenhouse gas emissions, produces a positive return for shareholders. Additionally, Dhaliwal et al. (2012) demonstrated a connection between the issuance of individual CSR reports and lower analysts' forecast errors. Aerts, Cormier and Magnan (2008) show that environmental disclosures provided by European and U.S. companies in 2002 are linked to more accurate analysts' earnings forecasts, which can reduce capital cost through a reduction in information risks. They identified differences by sector, country and by type of report (printed or available online).

Huang and Watson (2015) conducted a literature review and explored the consequences of CSR disclosure. Some of the studies reviewed showed a relationship between Corporate Social Responsibility (CSR) and the value of companies, represented by the present value of future cash flows and by the cost of capital. These studies also highlighted the value relevance of Corporate Social Responsibility (CSR) information.

Cormier and Magnan (2007) and Dhaliwal, Li, Tsang and Yang (2011) provided evidence that environmental disclosure may be associated with lower equity cost. Cormier e Magnan (2007) investigated the relationship between environmental reporting and the company's profits and market value, identifying the impact on the organizational environment to provide a broader perspective. The study considered companies from Canada, France and Germany so as to allow comparisons. Results indicated a modest impact on the market value of German companies, but no statistically significant influence was identified for companies in Canada and France. Dhaliwal et al. (2011) identified that companies with a high cost of equity tend to start publishing CSR disclosures, because of its link to reductions in cost of equity, an increase in institutional investors and greater analysts' coverage.

Clarkson, Fang, Li and Richardson (2013) showed that voluntary environmental disclosure can increase the company's value and provide incremental information about the company's

competitiveness and expected future performance. However, they did not identify any relationship to cost of equity. Thus, environmental data can be seen as a 'signal' to investors, consistent with the results attained by Lys et al. (2014).

The divergence between the findings of Clarkson et al. (2013) and Dhaliwal et al. (2011) may indicate a difference between the effects of isolated environmental disclosures and CSR information, and possibly an indicator of value attached to integrated information.

Other studies find heterogeneous effects of CSR disclosure on firm value and cost of capital among different subsamples. Richardson and Welker (2001) analyzed annual reports of Canadian companies, from 1990 to 1992, and identified a positive relationship between the cost of equity and social disclosures. This result does not apply to a subsample of companies that attained a better financial performance. The result was unexpected and the authors indicated that it may be related to disclosure biases, which means that companies are not neutral in social disclosure, and tend, on average, to view this kind of report.

Cohen, Holder-Webb, Nath and Wood (2011) interviewed small investors and found that they did not consider CSR information to be very important as compared to economic and governance information. Cheng, Green and Ko (2015) conducted an experiment to identify whether investors value environmental and social information. They identified that investors only value CSR information when these are aligned and important to the strategy of the organization; in a cost minimization scenario, CSR information is not valued, a fact that is in line with the materiality concept of Integrated Reporting (IIRC, 2013).

Barker (1998) conducted a series of interviews seeking to analyze the economic incentives related to information flow from the perspective of CFOs, analysts and investment fund managers. The results of the study indicate that the information provided by organizations has the ability to influence the judgment of fund managers, meaning that it has an impact on cost of equity, and that analysts play an intermediary role in this relationship.

The study conducted by Plumlee et al. (2015) re-examined the relationship between the quality of a company's voluntary environmental disclosures and the value of the enterprise, exploring the relationship between the components of the value of the company (expected future cash flows and cost of equity) and the quality of voluntary environmental disclosures. The results provide evidence that the quality of voluntary environmental disclosures is associated with the value of the company, through both cash flow and cost of equity, demonstrating that the type (subjective / objective) and nature (positive / negative / neutral) of the disclosure are important factors in forecasting.

There are several empirical studies that indicate a negative relationship between cost of equity and non-financial voluntary disclosure (Francis et al., 2008; Ng & Rezaee, 2015). Furthermore, forward-oriented information is associated with a lower cost of debt (Kristandl & Bontis, 2007).

Additionally, the literature supports the view that better non-financial performance is associated with a lower cost of equity. El Ghouli, Guedhami, Kwok and Mishra (2011) analyzed a sample of 12,915 observations about U.S. companies, in the period between 1992 and 2007, and collected evidence that better CSR scores are associated with a lower cost of equity, especially when “CSR investments [are related to] employee relations, environmental policies, and product strategies” (El Ghouli et al., 2011, p 2400); evidence also revealed that the so-called “sin” industries (tobacco and nuclear power) showed a higher cost of equity. Chava (2014) had similar findings about companies in industries with high externalities, such as hazardous chemicals, substantial emissions, and climate change concerns. Gupta, 2018 and Y.-B. Kim, An, & Kim (2015) showed that carbon emissions are positively related to cost of equity.

Specifically in relation to the disclosure of carbon emissions, Matsumura, Prakash and Vera-Muñoz (2014) analyzed S&P 500 companies that were part of the Carbon Disclosure Project (CDP), in order to identify the effect of the disclosure on the value of the company. They identified a negative relationship between the number of tons of carbon emitted and the value of the company. They also found a positive relation between the disclosure of these issues and the value of the firm. Therefore, it is perceived that the market penalizes all carbon emitters but penalizes more intensely the companies that do not disclose this aspect.

Blaconiere & Patten, (1994) examined the market reaction to chemical companies (except Union Carbide) due to the Union Carbide chemical leak in Bhopal, India. The evidence indicates that there was a reduction in the value of the companies after the incident. However, companies that had greater environmental disclosure had less impact on their market value. Thus, these results may indicate that investors interpret that companies that provide environmental disclosures tend to better manage their activities so as to avoid future costs.

The studies of Blaconiere and Patten (1994), Chava (2014), El Ghouli et al. (2011), Gupta (2018), Y.-B. Kim et al. (2015) and Matsumura et al. (2014) provide evidence that investors are interested in CSR reporting and the actual performance of the company, perceiving companies with responsible actions as less risky, which can result in economic benefits for the companies, such as reduction of the cost of equity and cost of debt.

Studies that analyzed the cost of equity using the CAPM (Capital Asset Pricing Model) or the Fama and French Three-Factor Model as proxies also found a negative relationship between cost of capital, and non-financial information and performance. Girerd-Potin, Jimenez-Garcès and Louvet (2014) reported that companies that were “non-responsible” in each of the dimensions analyzed were asked for an additional risk premium, indicating that socially responsible firms have a lower cost of capital. Sharfman and Fernando (2008) showed that better environmental risk management practices are associated with lower cost of capital.

Specifically related to Integrated Reporting, Serafeim (2015) analyzed a sample of 1,066 North American companies that practiced some level of Integrated Reporting between 2002 and 2010. The analysis found that a greater degree of information integration is associated with longer-term investors and that Integrated Reporting is positively associated with the percentage of shares held by dedicated investors, and negatively associated with the percentage of shares held by transient investors. This suggests that companies should use Integrated Reporting not only to attract dedicated investors, but also to become unattractive to transient investors. These findings corroborate the view that long-term investors are more likely to use the integrated report. However, one should be cautious about the interpretation of the results and conclusions of Serafeim’s paper, since the integration data used in the survey was extracted from the Thomson Reuters ASSET4 database between 2002 and 2010, and during that time there was no effective integration of information in the corporate reports of most organizations (KPMG, 2013).

The study conducted by Barth et al. (2015) analyzed the relationship between the quality of the integrated reports (metrics not disclosed), but is based on the analysis performed by the audit firm EY Global Limited, specifically for their award of excellence in Integrated Reporting. This information defined the study sample, which corresponds to the 100 largest listed companies on the Johannesburg Stock Exchange, where Integrated Reporting has been mandatory since 2010. The results indicate a positive association between the quality of the mandatory integrated report, and the liquidity of the shares and value of the company.

Another study aligned with the present research is the one developed by Baboukardos and Rimmel (2016) which analyzed 954 observations of companies listed on the Johannesburg Stock Exchange, aiming to identify the market valuation of Integrated Reporting disclosures. The study compared the periods before and after the <IR> obligation in South Africa, and the results indicate an increase in the coefficient of assessment of profits, yet also showed a reduction in the value relevance of the net assets.

Rambe and Mangara (2017) analyzed the 2014 Integrated Reporting of the top-106 Johannesburg Stock Exchange (JSE) listed companies in South Africa to investigate the relationship between the share-price (with a self-constructed measure of Integrated Reporting Ratings (IRR)), the CEO's age and his years of experience as a CEO. The results indicate a positive relationship, but they do not explore how these factors interact.

Also focused on South African companies, Zhou et al. (2017) analyzed the alignment of Integrated Reporting by South African companies with the Integrated Reporting Framework, and presented evidence that it is associated with a lower margin of analysts' forecast error and a lower cost of equity.

The literature that specifically analyzes the effect of presenting information based on the framework developed by the IIRC (2013) focused only on the mandatory adoption of the integrated report, which took place in South Africa, starting in 2010. Thus, there is a gap in the literature for the discussion of the effects of the voluntary adoption of the Integrated Reporting, which is relevant given that when the pilot project was established there were companies from 25 countries that voluntarily adopted (IIRC, 2014).

García-Sánchez and Noguera-Gámez (2017) analyzed a global sample from 2009 to 2013, and identified a negative relationship between Integrated Reporting adoption and the cost of equity, especially in companies that increased their leverage, and those that had problems with information asymmetry and operated in markets with low investor protection.

Reimsbach et al. (2018) presented evidence from another perspective. Based on the results of an experimental study with 104 professional analysts and fund managers, they found that investors can acquire more non-financial information from Integrated Reporting, when compared to a stand-alone report. However, the probability of investment by participants that analyzed integrated reports was not different from those who accessed the stand-alone report. These mixed results indicate a gap in the literature that would help understand how investors react to the information in the Integrated Reporting.

We expect the Integrated Reporting disclosure to be negative in relationship to the cost of equity. This argumentation is supported by Voluntary Disclosure Theory and empirical evidence that shows that voluntary disclosure, CSR disclosure, and an increase in non-financial performance are related to a lower cost of equity (Botosan, 2006; Leuz & Verrecchia, 2000; Plumlee et al., 2015; Sierra-García et al., 2015; Zhou et al., 2017). Nevertheless, there is evidence that indicates that economic benefits are observed only in specific settings (Barth et al., 2017; Reimsbach et al., 2018; Richardson & Welker, 2001).

Based on prior literature Integrated Reporting disclosure is expected to have a negative relationship with respect to cost of equity, leading to this study's first hypothesis as follows:

**H1:** Integrated Reporting disclosure is negatively associated with the cost of equity.

### *2.3.1 Proxy for Cost of Equity*

Cost of equity was defined in the literature in two predominant ways. The first is the minimum rate of return required by investors to provide the company with adequate capital at the level of risk that the investment offers (Botosan, 2006), that is, return on investment ( $r$ ) represents the rate of return on a risk-free investment ( $r_f$ ) added to a premium referring to the company's idiosyncratic risks ( $r_{prem}$ ), also known as non-diversifiable risk (Bekaert & Harvey, 2000; Botosan, 2006). This can be represented in the following formula:

$$r = r_f + r_{prem}$$

Another way to define the cost of equity is as the risk-adjusted discount rate applied to expected future cash flows (Botosan, 2006). This can be represented by the discounted dividend formula, as follows:

$$P_t = \sum \frac{E_t(Div_{1+t})}{(1+r)^t}$$

As discussed in previous chapters, the literature points to information asymmetry as an item that influences the cost of capital, especially considering its impact on the risk taken by the parties. This is due to the fact that transaction costs can be identified by the risk of trading in the same scenario as more informed investors, and the actual lack of knowledge of relevant information that may impact future return expectations. Therefore, because of the difference in knowledge between internal and external actors of the company, a relative remuneration is expected (Verrecchia, 2001).

The cost of equity can also be known as "expected cost of equity capital", because it is not observed directly in the market, that is, although stock prices can be observed, future cash flow expectations and the rate of return cannot. Empirical studies analyzing the relationship

between corporate disclosure and cost of capital use proxies to obtain this information (Botosan, 2006).

A classic method for estimating the cost of capital uses the ex post approach, which analyzes the risk factor of the predetermined prices. The Capital Asset Pricing Model (CAPM) refers to one of the first systematic analysis of the relationship between the risk of financial assets and the expected return (Perold, 2004). It is based on the Portfolio Theory, which recommends that the diversification of a portfolio tends to reduce investment risks, to the extent that they are not correlated. In other words, diversification allows risk reduction, but does not completely mitigate them (Markowitz, 1952). In essence, diversification allows for the search of an efficient frontier, which corresponds to the theoretical composition of a portfolio that provides the highest expected return with the least risk exposure, or risk exposure appropriate to its risk appetite (Perold, 2004; Scott, 2012).

Another aspect that influences the relationship between risk and return is the existence of risk-free rates. There are fixed-rate securities and risks of default which are reduced to levels close to zero by creditor credibility (government debt normally falls within these characteristics) (Botosan, 2006).

One of the first techniques used to consider the risk-free rate in an investment decision was the Sharpe Ratio, which is any security's return minus the risk-free divided by the security's return standard deviation. Comparing all the possible combinations of investments distribution between the actual security and the risk-free rate, it is possible to determine the optimal portfolio and which investment is most appropriate for the specific level of risk tolerance (Perold, 2004). The formula is as follows:

$$\text{Sharpe Ratio} = (E_H - r_f) / \sigma_H$$

Considering that it is possible to buy and sell risk-free debt securities, investors can take into account the same expected return, risk and correlation, but choose different portfolio compositions because of their risk tolerance (Perold, 2004).

The Capital Asset Pricing Model (CAPM) defines the cost of equity as a rate of return on a risk-free investment, plus a company-specific risk premium. That should represent the compensation required by investors to allocate resources in a given investment. The CAPM determines the expected return on an action, using the following formula:

$$E(r_i) = r_{RF} + \beta_i [E(r_{Mkt}) - r_{RF}],$$

where:

$E(r_i)$  = Expected return on stock

$r_{RF}$  = Return on a risk-free asset

$\beta_i$  = Idiosyncratic risk

$E(r_{Mkt})$  = Market expected return

There are several criticisms regarding this approach, especially considering the restrictions of modeling, even in models that include other variables, such as the Three-Factor Model (Fama & French, 1993). There are models that may not consider all the variables necessary to understand the complexity of the problem being studied. There are also questions about the data needed to estimate the model, since longer time series and the definition of market risk levels, among others, may become necessary.

Nevertheless, the Capital Asset Pricing Model (CAPM) is the most widely used model by analysts and agents for estimating a company's cost of equity and for the valuation of capital market portfolios in general (Fama & French, 2007; Perold, 2004). Despite the simplicity of the model, it is possible to extract useful information about investors' perception of risk relative to the company as compared to the market, in order to obtain an estimate of the company's cost of equity (Perold, 2004).

#### ***2.4 Cost of Debt***

As far as it is known, this is the first study that investigates the relationship between Integrated Reporting and the cost of debt. Integrated Reporting is an evolution of the annual report that supplies information for financial providers (Mio & Fasan, 2013), incorporating non-financial information that allows them to better evaluate the company. Cheung, Tan and Wang (2018) highlighted that “bank loans are a dominant source of finance in most economies around the world” (Cheung et al., 2018, p 506). To evaluate if IIRC is achieving its objective with the Integrated Reporting Framework, this study analyzes the relationship between Integrated Reporting adoption and the cost of debt.

Even though Integrated Reporting is an evolution of annual reports, it is possible to see how non-financial information, namely sustainability and CSR disclosures, can have potential effects on cost of debt.

The fact that debt holders have a fixed income makes them perceive risk taking in a different way than shareholders, who attain returns that are directly connected to financial results. This

being the case, risk taking increases the uncertainty, but also increases the expected return. Debt holders are mainly concerned with timely payments of principal and interest, but not necessarily with the performance of the company in the long term preferring to avoid risk (Sengupta, 1998; Silva, Sampaio, Beiruth, & Silva, 2017).

Prior literature has presented evidence that better disclosure is associated with a lower cost of debt, due to a decrease in information asymmetry (Francis et al., 2008; Sengupta, 1998), and other studies showing that companies being especially “punished” for bad non-financial performances (Bauer & Hann, 2010; Chava, 2014; Jung et al., 2016; Ye & Zhang, 2011).

An increase in the quality of information is related to a reduction of the uncertainties faced by capital providers, including debt, since increasing the quality of an organization’s disclosure can reduce monitoring costs and risks to lenders, as was determined by J.-B. Kim, Tsui and Yi (2011), whose study also evidenced that the adoption of IFRS (International Financial Reporting Standards) resulted in a reduction of interest rates on loans. Sengupta (1998) presented evidence that a higher quality of disclosure is negatively associated with cost of debt, which indicates that disclosure can provide a better understanding of a company’s performance and perspectives, resulting in a lower estimated default risk. Nonetheless, changes in disclosure practices can affect debt holders less than shareholders because the latter can ask the company for more information (Ball et al., 2015), without having to rely only on information that is publicly available.

On the other hand, intangibles or factors that are difficult to measure or assure do not have the same effect on the cost of capital as on the cost of debt. With respect to the level of uncertainty of these factors, Bae and Goyal (2009) also observed that “adverse selection costs are greater in growth companies because managers find it more difficult to communicate credible information about growth opportunities to lenders than information about assets already in place (Bae & Goyal, 2009, p 831).”

Specifically regarding non-financial disclosures as related to bad non-financial performance, Bauer and Hann (2010) analyzed 582 U.S. companies, from 1995 to 2006, and tested how the environmental profile of the firm was associated with cost of debt. The results indicated that environmental concerns are associated with higher cost of debt and lower credit ratings, and that good performers in environmental activities showed a lower cost of debt.

Sharfman and Fernando (2008) showed a positive relationship between cost of debt and environmental risk management. Chava (2014) presented evidence of higher cost of debt for companies with environmental concerns, such as hazardous chemicals, substantial emissions, and climate change concerns. Using a sample of 255 firm-year observations from 78

Australian companies, Jung et al. (2016) found a positive relationship between cost of debt and companies that do not answer the Carbon Disclosure Project (CDP) survey, which indicates Carbon Risk. The three studies above focused on environmental dimension aspects, while Goss and Roberts (2011) analyzed 3,996 loans granted to U.S. companies and found evidence that CSR concerns are related to a higher cost of debt, but CSR investments do not affect cost of debt; therefore, even when viewed from a broader perspective, only CSR concerns are associated with cost of debt, yet good practices are not.

La Rosa, Liberatore, Mazzi and Terzani (2018) analyzed the association between corporate social performance, proxied by a social dimension score attributed by ASSET 4 Database, and the cost of debt. Their research found two measurements of debt cost (accounting-based and market-based) and identified a negative association between social performance and cost of debt, and a positive association with debt rating.

On the other hand, Magnanelli and Izzo (2017) presented evidence of a positive relation between CSR performance and cost of debt. CSR performance was measured based on the Dow Jones Sustainability World Index (DJSWI). The authors highlighted that results indicated that CSR “is not a value driver with an impact on the firm’s risk profile” (Magnanelli & Izzo, 2017, p 250).

Suto and Takehara (2017) analyzed the relationship between CSR performance and cost of debt, in Japan. They observed that CSR and cost of debt were not associated, although, in the period between 2008 and 2010, there was in fact an increase in cost of debt. Between 2010 and 2013, however, this relationship was not observed, probably due to the fact that Japan’s market became more market-oriented.

As Magnanelli and Izzo (2017) and Suto and Takehara (2017) showed, in some cases, the cost of debt is not directly affected by non-financial disclosure and performance. This study will investigate the relation of Integrated Reporting adoption and cost of debt, proxied by credit ratings. The main logic presented for cost of debt is applied to credit rating, since adopting Integrated Reporting is expected to increase quality and usefulness of disclosure, reducing information asymmetry. Additionally, the adoption of Integrated Reporting should be related to better management of non-financial capitals and long-term value creation, among other changes that result in a reduction of perceived risk. All of the changes motivated by Integrated Reporting adoption can result in an increase of credit rating, which means that the company is considered a safer investment than before the adoption.

Previous literature presented evidence of a positive relationship between credit rating and non-financial performance and disclosure. Aman and Nguyen (2013) found evidence of an

increase of credit rating due to good governance practices, especially associated with institutional ownership and disclosure quality. La Rosa et al. (2018) reported a positive association between corporate social performance and credit rating.

Notwithstanding this evidence, Bauer and Hann (2010) only identify a relationship between credit rating and environmental concerns, while proactive environmental practices showed no correlation to credit ratings. Francis et al. (2008) showed that voluntary disclosure and earning quality are individually related to better credit ratings, but, when tested together, the voluntary disclosure coefficient decreases. Thus, the results are not definitive, meaning that there is still a need for further investigation of the relationship between voluntary disclosure and credit ratings.

The literature is not conclusive about the relationship of non-financial information and cost of capital. Based on (Francis et al., 2008; Sengupta, 1998), this study predicts that the relationship between adopting Integrated Reporting and cost of debt is negatively associated with the adoption of <IR>.

**H2:** Integrated Reporting disclosure is negatively associated with the cost of debt.

## ***2.5 Institutional Factors***

Institutional features and structures influence the way individuals behave in a society. These variations are due to monitoring system and collective relationships that influence the legitimation of stakeholders and the expectations about the behavior of the other individuals (Dhaliwal et al., 2014; La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1997; Nanda & Wysocki, 2011). This research effort further investigated institutional factors that can influence the cost of capital, both equity and debt, particularly the following factors: Enforcement of Law; Societal Trust; and Stakeholder Orientation.

### ***2.5.1 Enforcement of the Law***

Prior literature explored how institutional factors can influence the market and companies' practices, more specifically how the strength of the legal system influences the development of markets (La Porta et al., 1997), quality of corporate reporting (Ahmed, Chalmers, & Khelif,

2013; Barth, Landsman, & Lang, 2008; Christensen et al., 2013) and CSR disclosure (Chih, Shen, & Kang, 2008; Dhaliwal et al., 2012).

A study developed by Bhattacharya and Daouk (2009) demonstrated that law enforcement is an important condition for compliance. Their findings show that there are cases in which creating legislation without the proper enforcement can lead to worst results than the inexistence of the law. The authors demonstrated that equity cost increased in countries that did not implement adequate enforcement regarding insider trading laws (Bhattacharya & Daouk, 2009).

Companies in countries with higher enforcement are expected to engage in socially responsible practices, not just to comply to regulations, but because they are part of a set in which the State actively monitors and enforces the regulations. Leuz et al. (2007) argue that a legal system can protect outside investors by limiting the benefit of private control. This can deter insiders from engaging in misconduct, such as masking the company's performance. Enforcement, therefore, can lead to a decrease in the likelihood that insiders will act irresponsibly.

J. L. Campbell (2007) points out that companies will behave in a more socially responsible way when they are part of a high enforcement environment, especially if "the process by which these regulations and enforcement capacities were developed was based on negotiation and consensus building among corporations, government, and the other relevant stakeholders" (J. L. Campbell, 2007, p 955). The IIRC based the development of Integrated Reporting on a pilot programme and several discussions with stakeholders, allowing companies to share their experiences, adapting the framework to the needs of the different groups involved (Cheng et al., 2014).

Empirical studies have shown a relationship between country law enforcement, higher quality of corporate disclosure and economic benefits. Daske et al. (2008) states that companies in countries with stronger law enforcement have more incentives to improve the quality of reporting and are "less likely to get away with adopting IFRS merely as a label, that is, without materially changing their reporting practices" (Daske et al., 2008, p 1094) They also said that stronger enforcement reduces the cost of equity and increases the value of the company. Thus, companies in this setting are more likely to attain economic benefits from changes in reporting. Christensen et al. (2013) showed evidence of a decrease in information asymmetry after IFRS adoption, and pointed out that enforcement plays an important role in this relationship.

Concerning non-financial disclosures, Chih et al. (2008) reported that CSR is correlated with a reduction in earnings management, and law enforcement is associated with this effect. Chih, Chih and Chen (2010) presented evidence that companies in countries with a stronger legal environment are more likely to engage in CSR activities, while Dhaliwal et al. (2012) showed evidence of a negative relationship between non-financial disclosure and analysts' forecast accuracy. Liang and Renneboog (2017) analyzed 23,000 companies from 114 countries and found evidence that companies in higher enforcement environments are more likely to engage in CSR activities and have a better CSR performance. Additionally, their results indicate that enforcement is a stronger motivator for adoption than other company and country characteristics, such as ownership concentration, political institutions, and globalization. Other variables like size, ROA (Return on Assets), and stronger investor protection help to explain CSR performance.

Frías-Aceituno et al. (2013) presented evidence that companies in an environment with strong control mechanisms are more likely to adopt Integrated Reporting “as a complementary mechanism, ensuring the utility of the information, and thereby favouring stakeholder engagement (Frías-Aceituno et al., 2013, p 47).”

Therefore, Hypothesis 3a can be stated as follows:

**H3a:** The negative relationship between Integrated Reporting disclosure and cost of equity is stronger in countries with higher level of law enforcement.

Previous literature showed that law enforcement is a factor that influences loan contracts, because it affects the resources that lenders may have with which to charge the companies. Bae and Goyal (2009) show evidence of banks in a poor law enforcement environment react by “reducing loan amounts, shortening loan maturities, and increasing loan spreads (Bae & Goyal, 2009, p 823).” However, in a high enforcement contract environment the interest rate spreads are reduced, with loan sizes and maturity remaining the same.

Lenders adapt their contract conditions according to the borrower's credit quality, and to the risks of the institutional environment. Qian, Cao and Cao (2018) focused on 25 developing countries, and showed evidence that law enforcement is not associated with loan size, loan sources and collateral requirements, but is negatively correlated to the value of the collateral, indicating that law enforcement can loosen loan conditions in developing countries, but not in

all the dimensions studied. They also observed that informal institutions, e.g. societal trust and religion, have a substitutive effect on formal institutions, e.g. enforcement.

Laeven and Majnoni (2005) analysed the effect of law enforcement in 106 countries, using country-level data, and 32 other countries, using company-level data. They found evidence that judicial efficiency and inflation rates are the main factors that explain the difference in variance for interest rate spreads between countries. Nonetheless, changes in disclosure practices may be affected by the environment, due to the company's reliability and the pressures it suffers from the environment.

Additionally, Pinheiro and Cabral (1999) presented evidence of a relationship between lower credit spreads and a higher law enforcement environment in different states in Brazil. They also discussed how governance structures can influence financial markets, and pointed out that good informational infrastructure can reduce contract requirements. Therefore we predict that cost of debt is associated with the Integrated Reporting adoption, in countries with high enforcement environment.

**H3b:** The negative relationship between Integrated Reporting disclosure and cost of debt is stronger in countries with higher level of law enforcement.

### *2.5.2 Societal Trust*

A country's Societal Trust refers to the level of trust that its inhabitants have in each other, a level of trust that influences the contractual relationships between individuals. Nanda and Wysocki (2011) argue that trust interferes in contractual costs and, consequently, in the economy, since the transference of resources from the investors depends on their trust that managers will apply their resources in the most productive manner available. By the same token, it is expected that, in an environment of higher level of trust, managers' actions will be more aligned with the values and strategies of the company.

The level of trust in a society can influence capital market participants and, consequently, the demand for corporate disclosure. Nanda and Wysocki (2011) presented evidence that societal trust and reporting quality are positively associated, since investors perceive more credibility with more information, with a tendency to demand more information. Nonetheless, these results are limited to voluntary information, and no evidence is presented for mandatory disclosure.

At an organizational level, Garrett Hoitash and Prawitt (2014) analyzed if intra-organizational trust, such as employees' trust in management, is associated to the quality of the financial report. Their findings indicate that trust has a correlation with higher accrual quality; reduces the frequency of restated prior financial statements, a misstatements proxy; and yields a smaller amount of material weakness reported by internal control. Such effects are limited to companies with decentralized management (Garrett et al., 2014)

Kanagaretnam, Khokhar et al. (2018) found evidence that, in countries with higher levels of societal trust, CEOs compensation and the proportion of equity-based compensation are lower. This indicates that regulations on CEO compensation may not be so important, making the agency costs lower in this environment. The study analyzed 897 observations from 18 countries, from 2007 to 2013 (Kanagaretnam, Khokhar, et al., 2018). The analysis indicated the management in a high trust environment is expected to be in line with the expectations of the investors, and probably more aligned to the strategy disclosed to the public; thus, the adoption of Integrated Reporting tends to be an advantage and to generate stronger economic benefits.

Additionally, Kanagaretnam, Lee, Lim and Lobo (2018) argued that managers behave in a more ethical way in a higher societal trust setting. Their results, based on a sample of companies from 25 countries, show a negative relationship between societal trust and tax avoidance. Kanagaretnam, Lee, et al. (2018) also documented that in a strong legal environment, trust presents a less pronounced effect.

In summary, managers in countries with high societal trust will have a higher likelihood of behaving ethically and avoiding a break from the existing social contract (Kanagaretnam, Lee, et al., 2018). Managers, when engaged in a new initiative, such as Integrated Reporting, are more likely to behave and take decisions aligned with investors' expectations, effectively adopting Integrated Reporting and not just doing a label adoption (Kanagaretnam, Khokhar, et al., 2018).

Furthermore, investors tend to show more trust in disclosed information, which may lead to a stronger reduction in the cost of equity for companies in high trust societies (Garrett et al., 2014; Nanda & Wysocki, 2011).

**H4a:** The negative relationship between Integrated Reporting disclosures and cost of equity is stronger in countries with higher societal trust.

Meng and Yin (2018) presented evidence that the level of societal trust is negative in relation to the cost of debt. Societal trust is an informal institutional factor that can affect the perceived transaction and monitoring cost risks, possibly leading to a lower cost of debt (Meng & Yin, 2018). Qian, Cao and Cao (2018) analyzed formal and informal institutional factors that could affect the relationship between disclosure and cost of debt, and found that trust is more associated with state-owned financing, probably due to the fact that they have implicit guarantees from the government. Private banks, on the other hand, rely more on legal protection, so societal trust is also associated with lower collateral requirements and value of collateral. Results of split-sample analyses, however, indicate that the effect of informal institutions – Trust – are substitutive of formal institutions – Enforcement. However, based on Nanda and Wysocki (2011), we predicted that Societal Trust mediates the relationship between cost of debt and Integrated Reporting adoption.

**H4b:** The negative relationship between Integrated Reporting disclosures and cost of debt is stronger in countries with higher societal trust.

### *2.5.3 Stakeholder Orientation*

In line with Dhaliwal et al. (2014, 2012), this study analyzed the differences between the cost of equity for companies in stakeholder oriented countries and shareholder oriented countries, in order to understand the specific characteristics of investor behavior across the sample. Cultural aspects of a country can influence the relationship between companies, shareholders and stakeholders (La Porta et al., 1997; Zhou et al., 2016). In a stakeholder-oriented country, a wide range of stakeholders will feel entitled to ask for information and pressure companies into being transparent. On the other hand, companies in a shareholder-oriented culture are more likely to have the maximization of shareholder's wealth as their main objective, while other stakeholders may not be entitled to influence the activities or disclosure of the companies (Bradley et al., 1999). In essence, in stakeholder-oriented countries, the board of directors will be more likely to meet the demands from non-shareholder stakeholders (Zhou et al., 2016).

Additionally, stakeholders act as a complementary oversight institution, controlling companies' practices and performance, and pressuring regulators into creating and improving CSR enforcement laws (Ramanna, 2013).

Dhaliwal et al. (2012) argue that, in stakeholder-oriented countries, non-shareholder stakeholders have greater influence on companies' activity, financial performance, and CSR reporting. Consequently, the informational needs of multiple stakeholders will require reporting to have more specific and useful information in order to understand the company's performance.

Dhaliwal et al. (2014) demonstrated a wide variation in "public awareness of and regulatory attention to social and environmental issues (Dhaliwal et al., 2014, p 331)." Moser and Martin (2012) highlighted that recognizing the existence of a greater number of stakeholders as opposed to shareholders, makes it possible to explore new issues in the field of CSR and more opportunities to improve non-financial performance. This premise should generate investments directly related to stakeholder demands, minimizing the focus on shareholder value maximization.

Dhaliwal et al. (2012) provided empirical evidence of a stronger negative relationship between CSR disclosure and lower analysts' forecast errors, in countries that were more stakeholder-oriented. Dhaliwal et al. (2014) report a negative association between CSR disclosure and cost of debt, which was stronger for more stakeholder-oriented countries than for less stakeholder-oriented countries.

Integrated Reporting produced in a stakeholder-oriented cultural environment tends to more easily include non-financial factors in management decisions and, consequently, reporting. Given the need to respond to demands, this information has greater legitimacy, thus, a greater reduction in the cost of equity. In view of this, the following hypothesis was devised:

**H5a:** The negative relationship between Integrated Reporting disclosure and cost of equity is stronger in countries with higher stakeholder orientation.

Lenders also consider a country's institutional factors, such as Stakeholder Orientation, in order to exam their risk exposure and establish contractual terms. Gao, Li and Ma (2016) argue that institutional changes can encourage stakeholder-oriented decision-making and can result in a lower cost of debt. The authors analyzed legal changes that were implemented in some states in the U.S. Using a diff-in-diff research design, results indicate "a significant drop in the bank loan spread for firms incorporated in states that adopted constituency statutes, relative to firms incorporated in states without such statutes" (Gao et al., 2016, p 32).

Analyzing the relationship between CSR performance and cost of debt, Cheung et al. (2018) showed evidence from 20 countries, worldwide, that the relationship between CSR performance and bank loan pricing is mediated by stakeholder orientation at an institutional level. Test results of a subsample of high and low stakeholder-oriented countries indicate that only companies in a high stakeholder-oriented country benefit from lower priced loans related to a higher CSR performance; in low stakeholder-oriented countries this relationship is not observed. A country's stakeholder or shareholder orientation is associated with the choice to assure CSR reporting and with the type of assurer provider (Simnett et al., 2009; Zhou et al., 2016).

However, the literature did not identify any evidence on how stakeholder orientation affects the relationship between non-financial disclosure or Integrated Reporting, and the cost of debt. Considering the mixed results regarding disclosure and cost of debt (Magnanelli & Izzo, 2017; Suto & Takehara, 2017), this study predicts there will not be a relationship between them.

**H5b:** The negative relationship between Integrated Reporting disclosures and cost of debt is stronger in countries Stakeholder Oriented.

In the next chapter, the methodological strategies to test the enunciated hypotheses are described.



### 3. METHOD

The research question to be investigated is “How does cost of capital relate to Integrated Reporting disclosure and what is the impact of institutional factors on this relationship?” To address this question, an archival approach based on the Differences-in-Differences research design was adopted. This method has been used in several accounting research efforts (Ball et al., 2015; H. A. Hong, Hung, & Lobo, 2014; Sun, Cahan, & Emanuel, 2011), in an attempt to analyze the effect of a given event in two dimensions, namely “state” and “time.” “State” discriminates individuals undergoing treatment, and “Time” discriminates the period before and after the treatment.

Therefore, companies that adopted Integrated Reporting (<IR>) will be compared to a matched group, defined by a Propensity Score Matching procedure. Additionally, two groups, in the period pre- and post-adoption (**POST**) will be compared. This effect will be isolated in the interaction term (**IR \* POST**).

This chapter will stipulate the sample selection process, the econometric models used to test the hypotheses, the definition of the variables, and the descriptive statistics of the sample.

#### *3.1 Sample and Datasets*

Companies that voluntarily adopt Integrated Reporting constituted our treatment group and our benchmark was selected using the Propensity Score Matching technique. The study focuses on the period from 2010 to 2017, because 2010 was when the GRI Sustainability Database began to gather information on Integrated Reporting adopters (GRI - Global Reporting Initiative, 2014), and 2011 was the year of IIRC’s first main publication, “Discussion Paper Towards Integrated Reporting: Communicating Value in the 21st (de Villiers et al., 2014).”

##### *3.1.1 Integrated Reporting Measures*

To test our hypothesis, we employed a differences-in-differences (Diff-in-Diff) design for the period between 2010 and 2017, using a cross-country sample of publicly listed companies that voluntarily adopted Integrated Reporting, and a matched control group. The benchmark or control group helps to control for changes in the economic environment that may have an impact on the cost of capital (equity and debt), regardless of Integrated Reporting adoption.

Therefore, we identified the self-declared Integrated Reporting adopters. Firstly, companies that had their Integrated Reporting uploaded to the IIRC's Examples Database (IIRC, 2017) up to February 7<sup>th</sup>, 2018 were identified. This group was labeled **SAMPLE IIRC**. Next, companies that were part of the GRI Sustainability Database (GRI, 2017) were identified, creating another group that contained all identified integrated reporter adopters (labeled **SAMPLE ALL**).

All companies from all groups adopted Integrated Reporting, were considered in the treatment group, and were controlled using a dummy variable (**IR**).

Financial companies were excluded from the sample, since their specific capital structure cannot be analyzed with other industries. Also, considering that, since 2010, South African companies listed at the Johannesburg Stock Exchange (JSE) have been required to disclose integrated reports on a "comply or explain basis" (IoDSA, 2018; Johannesburg Stock Exchange, 2016), those companies were also excluded from the sample. The sample, therefore, was as follows:

517 companies disclosed their <IR> in the IIRC Examples Database;

400 publicly listed companies identified in the Eikon – Thomson Reuters Database;

125 South African companies (excluded);

265 after PSM - 2,551 firm-year observations;

223 companies - 2,138 firm-year observations with available data.

The adoption date referred to the year of the first disclosure available in the IIRC database (found in the "View by organization" field). Some companies were not available in this listing, so, for those, the company's website was accessed in order to verify the year in which the company disclosed their first report using the IIRC conceptual framework. If this information was not available, the first year in which the company presented elements that could indicate a plausible adoption of the Integrated Reporting was analyzed. Evidence of Integrated Reporting adoption included: business model presentation demonstrating the value creation process in several dimensions and / or usage of the capital nomenclature (i.e., financial, manufactured, intellectual, human, social and natural capitals), other content elements and principles presented in the IIRC Framework, and the title of the report.

Next, companies in the GRI Sustainability Disclosure Database in July / 2017 that claimed to have used Integrated Reporting ("Integrated Reporting" column = "YES") were identified. According to the database's guidelines, the Integrated Reporting column is self-reported, and

indicates that the report includes both financial and non-financial information, beyond basic economic information (GRI, 2017). The sample, therefore, was as follows:

1455 companies that reported usage of Integrated Reporting as described in the GRI Sustainability Disclosure Database;

753 publicly listed companies identified in the Eikon – Thomson Reuters Database;

280 South African companies (excluded);

512 after PSM - 4,799 firm-year observations;

420 companies - 3,890 firm-year observations with available data.

The adoption date of the Integrated Reporting refers to the first year in which the "Integrated Reporting" field was marked as "YES" in the GRI Sustainability Disclosure Database.

By merging the two groups of Integrated Reporting adopters, the **SAMPLE ALL** group ended up as follows:

1139 publicly listed companies identified in the Eikon – Thomson Reuters Database;

269 South African companies (excluded);

777 after PSM - 7,350 firm-year observations;

643 companies - 6,028 firm-year observations with available data.

The date of adoption in the IIRC was first to be considered; if that was not available, the GRI information was used, controlled by the dummy variable (**POST**), with 0 used for the period before the adoption of Integrated Reporting, and 1 for all periods after the adoption.

The samples from the IIRC database and GRI Sustainability Database were manually matched with the Eikon Thomson Reuters Database, where financial and ESG information was retrieved.

### *3.1.2 Propensity Score Matching*

The benchmark was formed by companies selected using the Propensity Score Matching (PSM) procedure. The matching criteria was the industry and the size of the company, measured by the total assets log (Pimentel, 2016).

The PSM technique is defined by Tucker (2010) as a function that determines the probability of an untreated individual to receive a treatment, given a set of covariates. Thus, we searched

for "subjects" with similar characteristics to those companies that adopted Integrated Reporting (Rosenbaum & Rubin, 1985). The PSM technique identified a group of companies that did not adopt Integrated Reporting, but had similar characteristics to companies that did, so that, when analyzed, the economic benefits minimized the effects of other factors that could influence the variable of interest (Peixoto, Pinto, Lima, Foguel, & Barros, 2012).

In other words, we aimed to identify in which scenario IR adopters would be if they had not made the IR adoption. As it is impossible to observe such counterfactual situation in the real world, we looked for a non-adopters group that presented similar characteristics to IR adopters (Peixoto et al., 2012; Wooldridge, 2006). The goal of the PSM technique is to minimize potential differences arising from the covariates distribution between the control and treatment groups, and to help identify the effect on the companies' cost of capital when Integrated Reporting is adopted.

The selection of the covariates "industry" and "size of the company" took into account that "a covariate is important if it is thought to have a strong influence on both treatment assignment and outcomes, and/or to be highly correlated with unobserved confounders influencing treatment and outcomes (Pimentel, 2016, p. 12)."

The nearest neighbor matching technique with replacement was used in a way that the control group was considered similar, but not identical to other companies. Since replacement was allowed, the same observation in the control group could be "matched" more than once to companies from the treatment group, resulting in more similar matches.

To establish the control group, all countries with <IR> adopter companies were identified and, from those countries, data from all public companies available in the Eikon – Thomson Reuters Database was collected. This totaled 287,600 firm-year observations. Therefore, **SAMPLE ALL** was made up of 6,028 from the treatment group, and 25,063 from the control group; **SAMPLE IIRC** was made up of 2,138 from the treatment group, and 8,853 from the control group.

The **SAMPLE ALL** ptest was 0.484, showing a balance between the treatment and control groups.

### *3.1.3 Data Collection*

The IIRC Examples Database and the GRI Sustainability Database were used to identify Integrated Reporting adopters, financial and sustainability information was collected from the EIKON Thomson Reuters Database, enforcement metrics were obtained from the World Bank

Database, trust measurements were retrieved from Nanda and Wysocki (2011), and stakeholder orientation proxy was obtained from the study by Dhaliwal et al. (2014).

Firm-year observations that were missing relevant accounting information necessary to calculate the variables were excluded from the sample. We excluded companies that showed: (a) values higher than 100% and values below zero for both Ke (cost of equity - CAPM) and Ki (cost of debt), and (b) leverage higher than 500% or below zero. All continuous financial variables at the 1st and 99th percentiles were winsorized to reduce the likelihood of results being driven by extreme values. In Appendix A, Figures 3 to 6, we presented the scatterplots for the variables before and after winsorizing them, and it is possible to infer that outlier problems were minimized by winsorization.

### ***3.2 Econometric Specification***

In order to test the relationship between Integrated Reporting disclosure and cost of equity (H1) and cost of debt (H2) we regressed the economic benefit (cost of equity or cost of debt) with the three dummy variables, represented by firms that adopted Integrated Reporting (IR), the periods pre- and post-adoption (POST), and their interaction (IR \* POST). Furthermore, we included firm-level, country-level and industry-level control variables. The regression model was as follows:

$$EconBenef = \alpha + \beta_1 IR + \beta_2 POST + \beta_3 IR * POST + \sum FirmControls + \sum CountryControls + \sum IndustryControls + \varepsilon$$

Equation 1. Model 1 analysis of the relationship between cost of capital and <IR>.

Model 1 identifies the relationship between Integrated Reporting disclosure and cost of equity and debt in the period after the adoption, compared to the period before the adoption, and compared to a control group. This model allows the cost of equity for the group that adopted Integrated Reporting (IR = YES), in the period after the adoption (POST = YES), to be compared to the cost of equity in the period before the adoption and to a control group defined by the Propensity Score Matching procedure.

EconBenef is the cost of equity measured by CAPM and the cost of debt measured by interest rate and credit rating. The control variables will be explained in the following sections.

Equation 2 was used to analyze the impact of institutional factors: Enforcement (H3a e H3b), Trust (H4a e H4b), and Stakeholder Orientation (H5a e H5b).

$$\begin{aligned}
 EconBenef &= \alpha + \beta_1 IR + \beta_2 POST + \beta_3 IR * POST + \beta_4 IR * Institutional\ Factor \\
 &+ \beta_5 POST * Institutional\ Factor + \beta_6 IR * POST * Institutional\ Factor \\
 &+ \sum FirmControls + \sum CountryControls + \sum IndustryControls \\
 &+ \varepsilon
 \end{aligned}$$

Equation 2. Model 2 analysis of the impact of institutional factors in the relationship between cost of capital and <IR>.

Model 2 is used to identify the role of institutional factors in the relationship between Integrated Reporting disclosure and cost of equity and debt, in the period after the adoption, as compared to the period before the adoption and to a control group. As mentioned before, this model allowed us to isolate the variance of companies that adopted Integrated Reporting (IR = YES), in the period after the adoption (POST = YES), while considering the level of each institutional factor, namely Enforcement, Trust and Stakeholder Orientation. The interaction terms show the variance attained from the comparison between <IR> adopters and non-adopters in both pre- and post-adoption periods.

Only pooled OLS regressions were run, with robust standard errors clustered at the firm level.

### 3.2.1 Libby Box

Below, we present the Libby Box to help understand the conceptual and operational relations investigated in this research (Libby, Bloomfield, & Nelson, 2002).

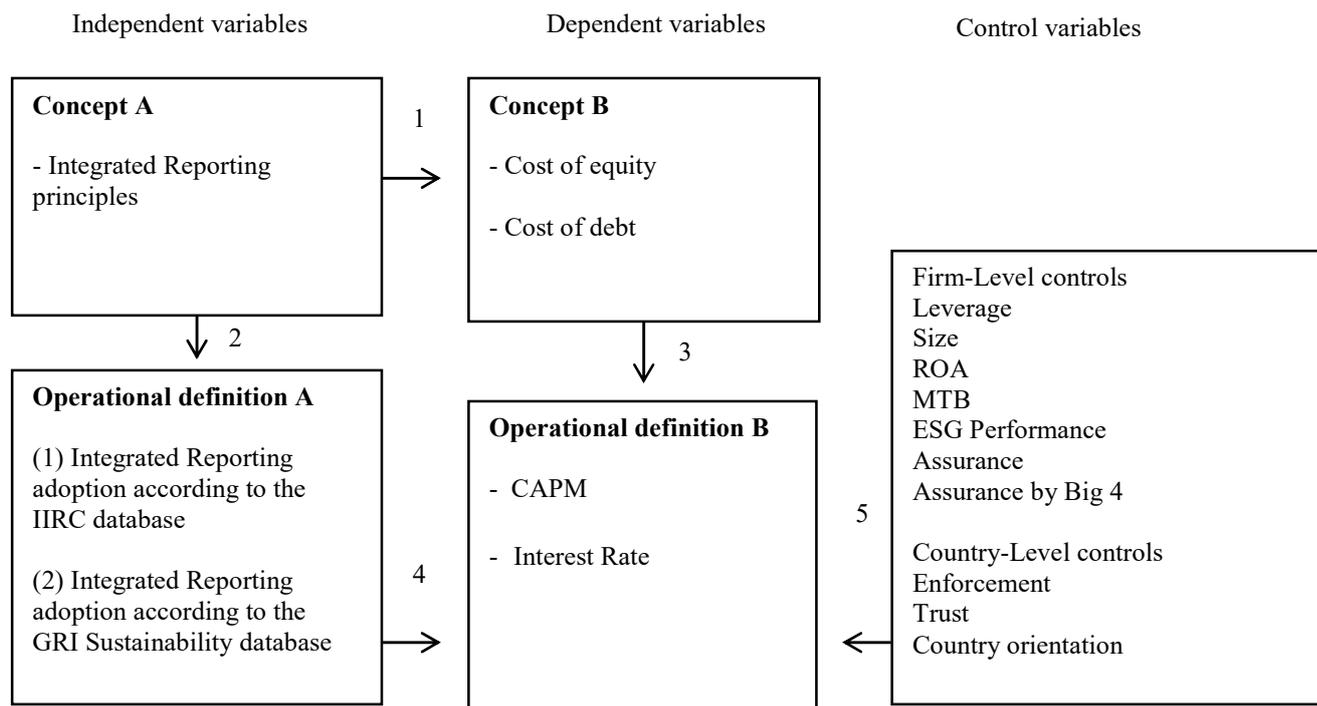


Figure 1. Libby box (adapted from Libby et al., 2002, p.795)

### 3.2.2 Dependent variables

Regarding the cost of equity, we retrieved information from the Thomson Reuters Database – Eikon; to estimate CAPM. The information included company-specific Beta based on returns from the previous 60 months (5 years); 10-year local government bonds used as the risk-free rate; and the expected return for the local markets for the previous 60 months (5 years), all based on literature by Albanez (2012) and Perold (2004).

Two different measures for cost of debt were employed: the first representing the interest rate (cost of debt), and the second the company's credit rating (Rating). The interest rate was estimated as the ratio between interest paid and the average debt in the past 5 years (La Rosa et al., 2018). The Thomson Reuters Database – Eikon provided us with the credit rating proxy retrieved from the “Rating SP – Equivalent Rank” field, which is the numerical equivalent of the Standard & Poor's Rating (Bhojraj & Sengupta, 2003; La Rosa et al., 2018; Oikonomou, Brooks, & Pavelin, 2014), ranging from 27 points, corresponding a AAA evaluation (highest rating), to 1 point, DDD evaluation (lowest). This represents an indirect measure of cost of debt. (La Rosa et al., 2018).

Since there was some missing data in the “Rating SP – Equivalent Rank” field, the information was complemented by data in the “Issuer Rating” field – defined as “Credit rating

assigned by Credit Rating Source” –applying the same values as the “Rating SP – Equivalent Rank” evaluations attributed to other companies in the same category (see Table 1).

Companies that had withdrawn (WD) or were Not Ranked (NR) were considered as missing values.

Table 1. Ratings categories and equivalent ratings according to EIKON “Rating SP Equivalent Rank”

<i>Rating</i>	<i>Suffix1</i>	<i>Suffix2</i>	<i>Rating Equivalent Adjusted</i>
AAA			27
AA	+	1	25
AA		2	24
AA	-	3	23
A	+	1	22
A		2	21
A	-	3	20
BBB/BAA	+	1	19
BBB/BAA		2	18
BBB/BAA	-	3	17
BB/BA	+	1	16
BB/BA		2	15
BB/BA	-	3	14
B	+	1	13
B		2	12
B	-	3	11
CCC/CAA	+	1	10
CCC/CAA		2	9
CCC/CAA	-	3	8
CC			7
C			4
C			3

Note: The Suffix corresponds to an additional categorization represented by a + or – sign (Suffix1) and a number (Suffix2).

### 3.2.3 Institutional Factors

Based on prior studies, we investigated the following institutional factors: Enforcement (**ENFORC**); Trust (**TRUST**); and Stakeholder Orientation (**STAKELAW**).

Enforcement (**ENFORC**) represents the strength of the legal enforcement systems. It is measured by the “Rule of law index” indicator, made available by the World Bank. The World Bank describes that Rule of Law “captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and

violence”, with higher scores for better legal enforcement. This proxy was used before by Daske et al. (2008), Doukakis (2014), H. A. Hong et al. (2014) and Zhou et al. (2016). We used subsamples of high and low institutional factors based on Doukakis (2014) H. A. Hong et al. (2014) and Leuz et al. (2007). A country was considered to have high (low) legal enforcement if the its score was above (below) the median of the total sample. For the 2017 period, the information was not unavailable, so we used the index of the previous year (2016) instead.

Societal Trust (**TRUST**) is a variable that indicates the general perception of trustability of people in a country. Nanda and Wysocki (2011) presented evidence of a positive relationship between societal trust and quality of accounting information, arguing that, in more reliable environments, stakeholders can infer that this information is indeed more reliable and demand a higher level of disclosure.

Based on Kanagaretnam, Khokhar, et al. (2018), Kanagaretnam, Lee, et al. (2018) and Nanda and Wysocki (2011), we measured societal trust according to responses to the question “Generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?” posed in the World Values Survey. The Index was calculated according to Nanda and Wysocki (2011):  $100 + (\% \text{ Most people can be trusted}) - (\% \text{ Can't be too careful})$ . We used values from wave 5, as it is the most complete wave until now<sup>1</sup>.

Stakeholder Orientation (**STAKELAW**) measure is retrieved from Dhaliwal et al. (2012). It is the average rank score of four indicators concerning the legal environment that protects employees’ rights, three of which were presented by Botero, Djankov, Porta, Lopez-de-Silanes and Shleifer (2004) as follows: employment laws, comprising protection of labor and employment; social security laws, accessing the existence of retirement programs, and health and unemployment benefits; and collective relations laws, which represent the possibility of claiming and negotiating rights. The remaining index was presented by La Porta, López-de-Silanes, Pop-Eleches and Shleifer (2004) and represents human rights laws. Higher scores represent greater stakeholder orientation.

Even if labor protection corresponds only to one group of stakeholders, it is possible for it to represent the country's legal scenario and the propensity to protect the interests of stakeholders in general (Dhaliwal et al., 2012). This proxy was also used by Cheung et al. (2018) and Dhaliwal et al. (2014).

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<sup>1</sup> For more information: <http://www.worldvaluessurvey.org/WVSContents.jsp>

### 3.2.4 Control Variables

Based on previous literature, we selected the most commonly used controls: leverage (**LEV**), natural logarithm for size (**ISIZE**), market to book ratio (**MTB**), return on assets (**ROA**), ESG Score (**ESG Score**), Assurance of Corporate Responsibility Report (**CSR Assur**), Assurance of Corporate Responsibility Report for a Big 4 company (**CSR Big4**), and controls for sector and country.

Financial leverage (**LEV**) is a numeric control variable that indicates the indebtedness level of the company, measured by the total debt/total asset ratio. Empirical literature indicates a positive relationship between leverage and cost of capital (Botosan, 2006; Richardson & Welker, 2001; Sengupta, 1998).

The level of financial leverage of a company is an important factor when analyzing the relationship between voluntary disclosure of corporate information (such as Integrated Reporting), and both cost of equity and cost of debt. It is shown that voluntary disclosure lowers risks involved in transactions with contractual payments (Modigliani & Miller, 1958). Also, companies with higher leverage levels disclose more information so as to reduce potential conflicts between owners, creditors and managers, and to try to reduce agency costs (Inchausti, 1997).

Company size (**ISIZE**) is an important control because, when compared to smaller companies, bigger firms attract more attention from shareholders and stakeholders, leading to higher levels of resources necessary to operate and the expectation that it must offer a different level of risk to investors and lenders (Botosan, 1997; Gebhardt, Lee, & Swaminathan, 2001; Richardson & Welker, 2001; Sharfman & Fernando, 2008). Another aspect related to size has to do with the company's reputation, since larger companies usually have higher ranked reputations, which can be related to risk perception. Additionally, larger companies have more options to deal with unexpected negative cash flows, which makes them less likely to default (Goss & Roberts, 2011).

Based on the findings of Fama and French (1993), we expected a negative relationship between size and cost of capital. For this research, we measured size as the natural logarithm of total assets (Botosan, 1997; Chava, 2014; El Ghoul et al., 2011; Gupta, 2018).

Market to Book (**MTB**) ratio is defined as the book value of shareholders' equity divided by the price of total shares, both at the end of the fiscal year. Previous literature used it under various perspectives, such as an indicator of growth opportunities, a firm-level risk factor or an unconditional conservatism. Market to book is considered a measure of growth opportunity

once investors indicate their prospect of gains, which are not reflected by the company's financial position (Goss & Roberts, 2011). Companies that present a high level of MTB ratio are considered to have good growth potential and are expected to increase disclosure to explain to stakeholders what are the economic factors that support those expectations. As a consequence, the additional disclosure reduces information asymmetry, agency costs and costs of financing (García-Sánchez & Noguera-Gámez, 2017; Smith & Watts, 1992). Another way to address this matter is to consider the market to book ratio as an indicator of risk of the company's growth as it compares to others (Fama & French, 1993; Goss & Roberts, 2011). Additionally, it can be perceived as a measure of unconditional conservatism in market mispricing (Goss & Roberts, 2011; Gotti & Mastrolia, 2012). Nevertheless, the relationship between cost of equity and cost of debt, and MTB is uncertain, as there is evidence that supports both positive (Botosan, 2006; El Ghouli et al., 2011; Fama & French, 1996) and negative (Chava, 2014; Dhaliwal et al., 2011) relationships.

A company's Return on Assets (**ROA**) is a control variable that indicates the level of profitability of the company and is measured by the net income and total assets ratio. The relationship between profitability and cost of capital, and disclosure is controversial. Profitable companies are expected to have more resources to invest in CSR projects (Barth et al., 2017), whereupon, board members are encouraged to report performance and decrease information asymmetry, leading to a reduction on the cost of capital. From a risk perspective, a good financial performance indicates a reduction on the company's risk (Ye & Zhang, 2011). On the other hand, there are studies that indicate a causal relationship between financial constraints and CSR disclosure (H. G. Hong, Kubik, & Scheinkman, 2012), or even showing the relationship as being not statistically significant (Dong, Fu, Gao, & Ni, 2016; Y.-B. Kim et al., 2015; Richardson & Welker, 2001).

The ESG Score (**ESG Score**) from Thomson Reuters is calculated based on more than 400 indicators released by the companies in their reports on environmental, social and governance aspects (ESG), of which the 178 most relevant indicators are analyzed considering materiality, relevance to the industry, and availability of data (Thomson Reuters, 2017). This metric was used by Serafeim (2015) as a proxy to Integrated Reporting Quality. Additionally, Barth et al. (2017), Dhaliwal et al. (2011) and El Ghouli et al. (2011) demonstrated the importance of considering CSR performance in order to understand the relationship between non-financial disclosure and cost of equity.

We included dummies that represent country and industry to which the companies belong. Different countries and industries can have systematic differences in the cost of capital and in

the practices of sustainability and non-financial capitals management and report, which, if not controlled, can cause a spurious correlation (Sharfman & Fernando, 2008; Simnett et al., 2009).

<i>Variable</i>	<i>Description</i>	<i>Source</i>
<i>EconBenef Ke CAPM</i>	Cost of equity measured by CAPM.	EIKON
<i>EconBenef Ki Net Ki</i>	Cost of debt; ratio between interest paid and the average debt in the past 5 years, net of taxes.	EIKON
<i>EconBenef Credit Rating</i>	Standard & Poor's Rating using a numerical correspondence.	EIKON
<i>IR</i>	Dummy variable; 1 if the company is an <IR> adopter, 0 otherwise.	IIRC Database GRI Database
<i>Post</i>	Dummy variable; 1 if observation is from post <IR> adoption period, 0 otherwise.	IIRC Database Company website
<i>Lev</i>	Leverage; level of indebtedness for the company	EIKON
<i>lSize</i>	Size; measured by the natural logarithm of total assets.	EIKON
<i>MTB</i>	Market-to-book ratio (market value/book value); represents the tangibility of the company.	EIKON
<i>ROA</i>	Return on Assets; represents the profitability level of the company.	EIKON
<i>ESG Score</i>	Environmental, Social and Governance Score; measured by the Integrated Reporting quality and CSR performance.	EIKON
<i>CSR Assurance</i>	Dummy variable; 1 if the company has its CSR information assured by a third part, 0 otherwise.	EIKON
<i>CSR Big 4</i>	Dummy variable; 1 if the company has its CSR information assured by a Big 4 Firm, 0 otherwise.	EIKON
<i>Enforc</i>	Enforcement measure; represents the legal enforcement systems' strength proxied by the "Rule of law index".	World Bank Database
<i>Trust</i>	Trust measure; overall perception of the trust level of citizens in a country, measured by World Values Survey.	Nanda and Wysocki (2011)
<i>Stakelaw</i>	Stakeholder Orientation measure; legitimation of multiple stakeholders to demand actions and information from the companies, proxied by the legal environment to protect employees' rights.	Dhaliwal et al. (2014)
<i>Country</i>	Dummy variables indicating the location of the company's headquarter	EIKON
<i>Industry</i>	Dummy variables indicating the core industry of the company.	EIKON

Figure 2. Variables description

### 3.2.5 Descriptive Statistics

Table 2 shows the sample distribution of firm-year observations for firms that adopted Integrated Reporting (treatment), firms that did not adopt Integrated Reporting (control), and for the pre- and post-adoption periods, by year. The post-adoption period starts with the actual date of adoption and beyond for the treatment group, and after 2013 for the control.

Table 2. Frequency by year for the sample “ALL”

Year	Control Pre-adoption Freq	Control Post-adoption Freq	Treatment Pre-adoption Freq	Treatment Post-adoption Freq
2010	2,031		465	51
2011	2,087		392	135
2012	2,127		324	201
2013		2,141	257	272
2014		2,210	174	350
2015		2,201	85	433
2016		2,213	19	500
2017		2,220		521
Total	6,245	10,985	1,716	2,463

The observations do not show a great variation in number by year. We can see that there are 201 firms that adopted Integrated Reporting up to 2012, adoptions that happened even before IIRC published the framework for Integrated Reporting, showing that companies were already making an effort to integrate non-financial information with financial information. Additionally, the IIRC engaged more than 100 companies in the pilot program to share their experiences and support the development of the framework (Busco et al., 2013).

Table 3 reports the frequency of observations by industry.

Table 3. Frequency by industry for the sample “ALL”

Industry	Control Pre-adoption Freq	Control Post-adoption Freq	Treatment Pre-adoption Freq	Treatment Post-adoption Freq
Applied Resources	76	145	45	50
Automobiles & Auto Parts	179	345	32	71
Chemicals	352	621	111	135
Collective Investments	50	85	4	4
Cyclical Consumer Products	229	417	72	115
Cyclical Consumer Services	201	372	39	52
Energy - Fossil Fuels	414	719	77	152
Food & Beverages	416	719	78	143
Food & Drug Retailing	85	174	31	25
Healthcare Services & Equipment	136	242	21	35
<b>Industrial &amp; Commercial Services</b>	<b>535</b>	<b>908</b>	<b>177</b>	<b>165</b>

Industry	Control	Control	Treatment	Treatment
	Pre-adoption Freq	Post-adoption Freq	Pre-adoption Freq	Post-adoption Freq
Industrial Conglomerates	54	98	34	27
<b>Industrial Goods</b>	<b>593</b>	<b>1,015</b>	<b>146</b>	<b>178</b>
Investment Holding Companies	44	73	9	13
<b>Mineral Resources</b>	<b>464</b>	<b>793</b>	<b>121</b>	<b>203</b>
Personal & Household Products & Services	77	117	29	39
Pharmaceuticals & Medical Research	128	223	63	88
<b>Real Estate</b>	<b>596</b>	<b>1,143</b>	<b>105</b>	<b>214</b>
Renewable Energy	9	24	2	11
Retailers	256	450	52	86
Software & IT Services	147	259	50	39
Technology Equipment	187	328	68	70
Telecommunications Services	175	301	74	110
Transportation	237	421	76	119
Utilities	605	993	200	319
Total	6,245	10,985	1,716	2,463

We can see in Table 3 that the industry with the highest number of observations is Utilities. This can be related to the fact that this sector is regulated and there are demands for sustainability information, which can lead them to pursue initiatives to increase non-financial performance and reporting. The second highest industry in number of observations is Real Estate, followed by Industrial Goods, Industrial & Commercial Services, and Mineral Resources. The last three are sensitive to environmental and social risks (results in line with prior literature), so they have more incentive to disclose non-financial information (Bachoo, Tan, & Wilson, 2013; Clarkson et al., 2013; Kolk & Perego, 2008; Plumlee et al., 2015).

Table 4. Frequency by country for the sample “ALL”

Country	Control	Control	Treatment	Treatment
	Pre-adoption Freq	Post-adoption Freq	Pre-adoption Freq	Post-adoption Freq
Australia	162	279	40	122
Austria	42	70	15	25
Belgium	38	73	27	50
<b>Brazil</b>	<b>174</b>	<b>291</b>	<b>82</b>	<b>213</b>
<b>Canada</b>	<b>246</b>	<b>422</b>	<b>27</b>	<b>60</b>
Chile	81	147	28	36
China	241	522	10	12
Colombia	12	20	27	45
Denmark	26	50	9	31
Finland	36	69	49	95
France	214	372	60	63
Germany	171	292	70	92
Greece	59	80	8	4
<b>Hong Kong</b>	<b>366</b>	<b>688</b>	<b>21</b>	<b>33</b>
<b>India</b>	<b>398</b>	<b>583</b>	<b>29</b>	<b>35</b>
Italy	99	153	30	43
<b>Japan</b>	<b>1,100</b>	<b>1,896</b>	<b>425</b>	<b>384</b>
Korea; Republic	308	548	41	55

Country	Control	Control	Treatment	Treatment
	Pre-adoption	Post-adoption	Pre-adoption	Post-adoption
	Freq	Freq	Freq	Freq
Luxembourg	16	30	20	12
Malaysia	92	222	9	17
Mexico	42	88	78	85
Netherlands	43	73	65	86
New Zealand	31	59	15	57
Oman	3	8	2	6
Philippines	81	147	22	42
Poland	51	76	36	35
Russia	163	255	35	42
Singapore	107	187	17	44
Spain	54	106	62	121
Sri Lanka	17	32	21	34
Sweden	70	167	67	84
Switzerland	103	165	61	89
<b>United Kingdom</b>	<b>262</b>	<b>454</b>	<b>151</b>	<b>230</b>
<b>USA</b>	<b>1,335</b>	<b>2,355</b>	<b>44</b>	<b>73</b>
Zimbabwe	2	6	13	8
Total	6,245	10,985	1,716	2,463

Table 4 shows the frequency of firm-year observations by country. The countries with the highest number of companies is the U.S.A. and Japan, with Japan having the highest number of Integrated Reports (384), followed by the United Kingdom (230), and Brazil (213).

Table 5. Scores of Institutional Factors and frequency by country for the Sample "ALL"

Country	Score Mean	(1) ENFORCEMENT		Score Value	(3) TRUST		Score Value	(5) STAKEHOLDER ORIENTATION		(6) High Freq
		Low Freq	High Freq		Low Freq	High Freq		Low Freq	High Freq	
Australia	1.789625		603	92.4		603	14.88		603	
Austria	1.834359		152	70.2	152		15.88		152	
Belgium	1.435161	163	25	63	188		16.13		188	
<b>Brazil</b>	-.0519951	760		17.5	760		12.13	760		
Canada	1.807993		755	85.9		755	13.5		755	
Chile	1.30803	292		34.4	292		13.38		292	
China	-.3942215	785								
Colombia	-.3147491	104		30.9	104					
Denmark	1.937843		116	131.9		116	23.38		116	
Finland	1.999972		249	117.5		249	22.5		249	
France	1.443399	709		37.9	709		25.63		709	
Germany	1.679028		625	75.8	625		22.75		625	
Greece	.4065093	151		54.6	151		17.63		151	
Hong Kong	1.671383		1,108	82.4		1,108	15.83		1,108	
India	-.0636395	1,045		52.5	1,045		7	1,045		
Italy	.363708	325		60.8	325		21.5		325	
<b>Japan</b>	1.414993	3,325	480	79.6		3,805	13	3,805		
Korea; Republic	1.023168	952		56.9		952	13.25		952	
Luxembourg	1.813043		78							
Malaysia	.5104566	340		17.7	340		3.13	340		
Mexico	-.5050531	293		41.7	293		15		293	

Country	(1) ENFORCEMENT			(3) TRUST			(5) STAKEHOLDER ORIENTATION		
	Score Mean	Low Freq	High Freq	Score Value	Low Freq	High Freq	Score Value	Low Freq	High Freq
Netherlands	1.880352		267	90.6		267	20.13		267
New Zealand	1.927576		162	102.2		162	12.63	162	
Oman	.461111	19							
Philippines	-.4279048	292		20.1	292		12.75	292	
Poland	.7573512	198							
Russia	-.7747242	495							
Singapore	1.757757		355	59.8	355		5.75	355	
Spain	1.029406	343		40.9	343		19.75		343
Sri Lanka	-.100252	104							
Sweden	1.996387		388	134.5		388	26.88		388
Switzerland	1.864256		418	107.4		418	19.75		418
<b>United Kingdom</b>	1.724471		1,097	61.7	1,097		10.5	1,097	
<b>USA</b>	1.620458		3,807	78.8	3,807		9.13	3,807	
Zimbabwe	-1.480926	29		24.9	29				
<b>Total</b>		10,724	10,685		11,859	7,871		11,663	7,934

Note: Enforcement is a metric measured by year, so the value represented in the Score is the average of the measure for all years. Trust and Stakeholder Orientation are constant over time. The low and high columns represent the number of observations in the set that are below the average (low) and above the average (high), for each of the institutional factors.

Table 5 shows that Denmark, Finland and Sweden have the highest scores in terms of the three institutional factors: Enforcement, Trust and Stakeholder Orientation. New Zealand is among the highest scores for Enforcement and Trust, and France and Germany are among the highest scores for the Stakeholder Orientation evaluation.

On the other hand, the Philippines is among the lowest positions in terms of Enforcement and Trust. Mexico, Russia and Zimbabwe have the lowest scores for Enforcement, Brazil and Malaysia have the lowest scores for Trust, and India, Malaysia, Singapore and the U.S. are among the lowest measures of Stakeholder Orientation, which leads us to the conclusion that they are Shareholder Oriented. It is important to note that the U.S. was found to have a low stakeholder orientation score, according to Dhaliwal et al. (2014, 2012).

Table 6. Sample ALL - Descriptive statistics by adopters (treatment) and non-adopters (control).

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	N	Control mean	sd	N	Treatment mean	sd
Ke CAPM	16,440	<b>0.0888</b>	0.0759	4,023	<b>0.0810</b>	0.0657
Ki Net	15,623	<b>0.0390</b>	0.0398	3,776	<b>0.0375</b>	0.0377
LEV	17,230	86.15	86.27	4,179	82.37	76.99
ISIZE	17,230	23.50	2.509	4,179	24.18	2.817
ROA	17,230	4.062	6.140	4,179	4.532	5.921
MTB	16,611	1.922	1.902	4,083	2.119	1.924
ESG Score	5,992	<b>52.71</b>	17.97	2,319	<b>65.80</b>	14.23
ENFORC	17,230	1.182	0.763	4,179	1.175	0.824
TRUST	15,816	70.39	22.00	3,914	69.49	29.59
STAKELAW	15,776	13.08	5.045	3,821	15.47	5.157
Rating	6,112	18.94	3.722	2,125	20.25	3.073

Note: *Ke CAPM*: Cost of equity measured by CAPM; *Ki Net Ki*: Cost of debt; ratio between interest paid and the average debt in the past 5 years, net of taxes; *Rating*: Standard & Poor's Rating using a numerical correspondence. *Lev*: Leverage; level of indebtedness for the company; *lSize*: Size; measured by the natural logarithm of total assets. *MTB*: Market-to-Book ratio (market value/book value); represents the tangibility of the company. *ROA*: Return on Assets; represents the profitability level of the company; *ESG Score*: Environmental, Social and Governance Score; measured by the Integrated Reporting quality and CSR performance. *Enforc*: Enforcement measure; represents the legal enforcement systems' strength proxied by the "Rule of law index". *Trust*: Trust measure; overall perception of the trust level of citizens in a country, measured by World Values Survey. *Stakelaw*: Stakeholder Orientation measure; legitimation of multiple stakeholders to demand actions and information from the companies, proxied by the legal environment to protect employees' rights.

In Table 6, it is possible to verify that the treatment group has a lower average cost of equity and cost of debt when compared to the average of control group, a fact that is in line with the prediction of H1 and H2, respectively.

Appendix C, Table 41 shows more detailed statistic description of the variables, and a comparison between the periods pre- and post-adoption of Integrated Reporting. The results in Table 41 show that firms that adopted Integrated Reporting have a higher ESG Score than the control group, both before and after the adoption, in line with argumentations by Lai et al. (2016). This indicates that companies are not adopting Integrated Reporting as a legitimation feature, due to poor ESG performance. By the same token, other factors that indicate that firms are not adopting Integrated Reporting as a legitimacy tool are size, leverage and profitability. Data presented in Appendix C, Table 41 indicates that these factors are not pressuring companies to engage in the initiative, since they had a lower leverage, bigger size and higher profitability, even before the adoption (C. H. Cho & Patten, 2007), results that are corroborated by Lai et al. (2016).



## 4. DATA ANALYSIS

### 4.1 Cost of Equity

As pointed out in Chapter 3, we analyzed the relationship between cost of equity and Integrated Reporting disclosure. Firstly, we conducted correlation and univariate analyses, basic procedures that help us understand, step-by-step, the studied relationship. Next, we conducted multivariate analyses, a more robust procedure that allows for control of multiple factors that can influence the relationship.

#### 4.1.1 Correlation and Univariate Analyses

Table 7 shows Pearson correlations for the main variables of interest. The cost of equity (Ke CAPM) is negatively related to ENFORC \* IR \* POST, serving as first evidence of H1, which states that in environments of higher enforcement the adoption of Integrated Reporting is associated with a decrease in cost of equity. Cost of equity is also negatively related to the ESG Score, a proxy for Integrated Reporting quality, providing initial evidence that Integrated Reporting quality is associated with the reduction of cost of equity. It can also be observed that Ke CAPM is positively related to Leverage, Size, and MTB, and negatively related to profitability.

Table 7. Correlation Matrix Ke CAPM – Sample ALL

	1	2	3	4	5	6	7	8	9	10	11	12
1 ke CAPM	1											
2 ir_post	-0.0411*	1										
3 esg_ir_post	-0.0457**	<b>0.983***</b>	1									
4 enforce_ir_post	-0.0423*	<b>0.914***</b>	0.896***	1								
5 trust_ir_post	-0.0132	<b>0.938***</b>	0.921***	0.955***	1							
6 stakel_ir_post	-0.0383*	<b>0.942***</b>	0.934***	0.861***	0.921***	1						
7 lev	0.0509**	<b>-0.0115</b>	-0.00546	-	-	-0.0137	1					
				0.0653***	0.0579***							
8 lsize	0.00946	<b>0.0950***</b>	0.102***	0.0754***	0.110***	0.0785***	0.0563***	1				
9 roa	-	<b>0.0198</b>	0.0167	0.0417*	0.0485**	0.0284	-0.207***	-0.0372*	1			
				0.0664***								
10 mtb	0.0671***	<b>0.0266</b>	0.0248	0.0360*	0.0379*	0.0290	0.201***	-0.195***	0.440***	1		
11 Esg_score	-0.129***	<b>0.272***</b>	0.315***	0.245***	0.254***	0.267***	-0.00741	0.201***	0.0822***	0.0995***	1	
12 Enforcement	-	-	-	0.119***	0.0442**	-	-0.114***	-0.280***	0.0134	0.0349*	-0.0165	1
				0.0812***	<b>0.0684***</b>							
						0.0646***						

\* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001

In Table 8, results from the univariate analyses show the behavior of cost of capital for both the treatment and control group, in the periods before and after the adoption of Integrated Reporting

Table 8. Univariate analysis – Sample ALL

		<i>N</i>	<i>Ke CAPM</i>
<b>Panel A – Treatment Pre- versus Control Pre-</b>			
TREATED PRE IR	(1)	1,624	0.07129
CONTROL PRE IR	(2)	5,803	0.06319
Difference	(1) – (2)		<b>0.00810</b>
One sided <i>p</i> -value			0.0001
<b>Panel B - Treatment Post- versus Control Post-</b>			
TREATED POST IR	(1)	2,399	0.08752
CONTROL POST IR	(2)	10,637	0.10276
Difference	(1) – (2)		<b>-0.01523</b>
One sided <i>p</i> -value			0.0000

Results from univariate analyses show that before the adoption of Integrated Reporting the treatment group had a higher average cost of equity when compared to the control group. The period after the adoption, however, shows a lower average cost of equity. Such results is preliminary evidence that supports H1, which states that the adoption of Integrated Reporting is associated with a decrease in cost of equity.

Table 9. Univariate analysis – Sample IIRC

		<i>N</i>	<i>Ke CAPM</i>
<b>Panel A – Treatment Pre- versus Control Pre-</b>			
TREATED POST IR	(1)	776	0.06100
CONTROL POST IR	(2)	2,147	0.05525
Difference	(1) – (2)		<b>0.00575</b>
One sided <i>p</i> -value			0.0395
<b>Panel B - Treatment Post- versus Control Post-</b>			
TREATED POST IR	(1)	845	0.09061
CONTROL POST IR	(2)	4,005	0.10708
Difference	(1) – (2)		<b>-0.01647</b>
One sided <i>p</i> -value			0.0000

The univariate analysis for the IIRC sample, in Table 9, showed that before the adoption of Integrated Reporting there is no statistically significant difference between the cost of equity of companies in the treatment and in those in the control group (p-value 0.0395). However,

after <IR> adoption, the treatment group presents an average cost of equity that is lower than the control group (p-value 0.0000), similarly to the analysis of the Sample ALL. These results is an initial evidence that supports H1.

#### 4.1.2 Integrated Reporting and Cost of Equity

Hypothesis 1 predicts that the cost of equity will decrease after companies adopt Integrated Reporting disclosure.

Table 10. IR and cost of equity – Sample ALL (H1)

VARIABLES	(1) Ke CAPM 1	(2) Ke CAPM 1	(3) Ke CAPM 1	(4) Ke CAPM 1	(5) Ke CAPM 1
IR	0.0183*** (0.0022)	0.0170*** (0.0023)	0.0164*** (0.0023)	0.0163*** (0.0023)	0.0285*** (0.0031)
POST	0.0413*** (0.0018)	0.0408*** (0.0018)	0.0409*** (0.0018)	0.0407*** (0.0018)	0.0572*** (0.0026)
<b>IR * POST</b>	<b>-0.0257*** (0.0031)</b>	<b>-0.0253*** (0.0031)</b>	<b>-0.0253*** (0.0031)</b>	<b>-0.0252*** (0.0031)</b>	<b>-0.0412*** (0.0039)</b>
ESG Score					-0.0002*** (0.0001)
LEV		0.0000*** (0.0000)	0.0000*** (0.0000)	0.0000** (0.0000)	0.0000* (0.0000)
LSIZE		0.0011*** (0.0004)	0.0011*** (0.0004)	0.0012*** (0.0004)	0.0006 (0.0007)
ROA				-0.0002 (0.0001)	-0.0002 (0.0002)
MTB			0.0014*** (0.0004)	0.0016*** (0.0004)	0.0008 (0.0005)
Constant	0.0384*** (0.0067)	0.0130 (0.0105)	0.0128 (0.0105)	0.0114 (0.0105)	0.0232 (0.0159)
Observations	20,463	20,463	20,308	20,308	8,225
R-squared	0.2880	0.2895	0.2929	0.2930	0.3555
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 10 shows negative and statistically significant results for the interaction of the companies in Sample ALL that disclosed Integrated Reporting in the period after the disclosure, confirming H1, and, consequently, allowing us to infer that the adoption of Integrated Reporting is associated with a decrease in the cost of equity. This evidence differs from what was reported for South African companies, which showed no effect in the cost of capital related to the mandatory adoption of Integrated Reporting (Barth et al., 2008). We show evidence that the voluntary adoption of Integrated Reporting is negatively related to the

cost of equity, which corroborates the evidence provided by García-Sánchez and Noguera-Gámez (2017).

The results of the first four tests take into consideration more than 20,300 observations. The number of observations is considerably reduced when the ESG Score is included (8,200), because this index considers a wide range of variables and, if there are missing material data, the ESG Score is not calculated (Thomson Reuters, 2017).

The ESG Score is also negative and statistically significant, but the magnitude of the coefficient is small, indicating that the quality of Integrated Reporting is related to an additional decrease in cost of equity, yet probably does not have a significant impact from an economic perspective.

Specifically about the control variables, leverage is positive and statistically significant in its association with cost of equity, but, as predicted in the literature, its coefficient is also small, considering that companies with a higher level of indebtedness are committed to paying a specific return to the capital regardless of performance (Botosan, 2006; Ng & Rezaee, 2015). In the presence of the other variables, MTB and ISIZE yield positive and statistically significant coefficients, indicating a relationship to cost of equity, in accordance with previous literature (Botosan, 2006; El Ghouli et al., 2011; Fama & French, 1996). And ROA is not statistically significant.

Table 11 shows the results of the analysis for the Sample IIRC, which means the companies that actually made their reports available in the IIRC database and signaled that they were following the Integrated Reporting Framework published by the IIRC.

Table 11. IR and cost of equity – Sample IIRC (H1)

VARIABLES	(1) Ke CAPM 1	(2) Ke CAPM 1	(3) Ke CAPM 1	(4) Ke CAPM 1	(5) Ke CAPM 1
IR	0.0162*** (0.0035)	0.0167*** (0.0036)	0.0167*** (0.0036)	0.0164*** (0.0036)	0.0286*** (0.0043)
POST	0.0535*** (0.0029)	0.0534*** (0.0029)	0.0534*** (0.0030)	0.0528*** (0.0029)	0.0616*** (0.0038)
<b>IR * POST</b>	<b>-0.0188*** (0.0053)</b>	<b>-0.0187*** (0.0054)</b>	<b>-0.0189*** (0.0054)</b>	<b>-0.0186*** (0.0054)</b>	<b>-0.0401*** (0.0058)</b>
LEV		0.0000*** (0.0000)	0.0000** (0.0000)	0.0000* (0.0000)	0.0000** (0.0000)
ISIZE		-0.0004 (0.0009)	-0.0004 (0.0009)	-0.0002 (0.0009)	0.0002 (0.0011)
ROA				-0.0005* (0.0003)	-0.0005 (0.0003)
MTB			0.0006 (0.0006)	0.0011 (0.0007)	0.0002 (0.0007)
ESG Score					-0.0003*** (0.0001)
Constant	0.0266**	0.0325	0.0312	0.0285	0.0305

VARIABLES	(1) Ke CAPM 1 (0.0118)	(2) Ke CAPM 1 (0.0228)	(3) Ke CAPM 1 (0.0227)	(4) Ke CAPM 1 (0.0222)	(5) Ke CAPM 1 (0.0246)
Observations	7,773	7,773	7,762	7,762	3,868
R-squared	0.3089	0.3106	0.3113	0.3121	0.3843
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The analysis results for the Sample IIRC is similar to the ones for the Sample ALL, essentially, the interaction term IR \* POST between the treatment and the period post-adoption is negative and statistically significant, which means that companies that adopted Integrated Reporting have a lower cost of equity in the period after the adoption as compared to the period before the adoption and to the control group, results that are in line with H1. The sample considered 7,700 firm-year observations, including the treatment and control group, and 3,800 firm-year observations for the model that took into account the ESG Score.

Table 12 shows the test results controlled by all three institutional factors, Enforcement, Trust and Stakeholder Orientation, for the countries where companies in the Sample ALL group maintain their headquarters.

Table 12. IR, cost of equity and institutional factors – Sample ALL (H1)

VARIABLES	(1) Ke CAPM 2	(2) Ke CAPM 2	(3) Ke CAPM 2	(4) Ke CAPM 2	(5) Ke CAPM 2
IR	0.0293*** (0.0031)	0.0292*** (0.0030)	0.0292*** (0.0030)	0.0300*** (0.0031)	0.0186*** (0.0024)
POST	0.0586*** (0.0027)	0.0615*** (0.0027)	0.0615*** (0.0027)	0.0628*** (0.0028)	0.0477*** (0.0019)
<b>IR * POST</b>	<b>-0.0423***</b> <b>(0.0040)</b>	<b>-0.0431***</b> <b>(0.0039)</b>	<b>-0.0431***</b> <b>(0.0039)</b>	<b>-0.0442***</b> <b>(0.0040)</b>	<b>-0.0285***</b> <b>(0.0033)</b>
ESG Score	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	
LEV	0.0000* (0.0000)	0.0000*** (0.0000)	0.0000*** (0.0000)	0.0000*** (0.0000)	0.0000*** (0.0000)
ISIZE	0.0005 (0.0007)	0.0006 (0.0007)	0.0006 (0.0007)	0.0005 (0.0007)	0.0012*** (0.0004)
ROA	-0.0002 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0001)
MTB	0.0008 (0.0005)	0.0005 (0.0005)	0.0005 (0.0005)	0.0005 (0.0005)	0.0012*** (0.0004)
<b>ENFORC</b>	<b>-0.0363***</b> <b>(0.0126)</b>			<b>-0.0359***</b> <b>(0.0136)</b>	<b>-0.0338***</b> <b>(0.0094)</b>
<b>TRUST</b>		<b>-0.0044***</b> <b>(0.0002)</b>		<b>0.0024***</b> <b>(0.0002)</b>	<b>0.0025***</b> <b>(0.0001)</b>
<b>STAKELAW</b>			<b>-0.0103***</b> <b>(0.0006)</b>	<b>-0.0149***</b> <b>(0.0009)</b>	<b>-0.0148***</b> <b>(0.0007)</b>
Constant	0.0876*** (0.0267)	0.4225*** (0.0292)	0.1730*** (0.0192)	0.0864*** (0.0267)	0.0568*** (0.0196)

VARIABLES	(1) Ke CAPM 2	(2) Ke CAPM 2	(3) Ke CAPM 2	(4) Ke CAPM 2	(5) Ke CAPM 2
Observations	8,225	7,805	7,783	7,783	18,806
R-squared	0.3567	0.3713	0.3715	0.3727	0.3139
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The model shows the negative relationship between the cost of capital and the adoption of Integrated Reporting for the companies' Integrated Reporting post-adoption period as compared to their pre-adoption period and to the control group, after controlling for the three institutional factors (Enforcement, Trust and Stakeholder Orientation).

Individually, all three variables show a significant negative relationship to the cost of equity and have an incremental effect in the explained variance. The Trust coefficient is 0.0024, which is in line with the findings of Kanagaretnam, Lee, et al. (2018) that showed that the effect of societal trust is less pronounced when legal enforcement is stronger. This result can also be due to multicollinearity; however, considering that other results have the same sign (positive/negative) and significance, it does not represent a big problem for the model. Additionally, considering a sample of 18,806 firm-year observations, there was no change in sign or statistical significance when excluding ESG Score from the model (5). These are preliminary evidence that actually support hypotheses H3a, H4a and H5a, though, we will investigate further regarding the institutional factors later in the study.

Table 13. IR, cost of equity and institutional factors – Sample IIRC (H1)

VARIABLES	(1) Ke CAPM 2	(2) Ke CAPM 2	(3) Ke CAPM 2	(4) Ke CAPM 2	(5) Ke CAPM 2
IR	0.0293*** (0.0043)	0.0291*** (0.0042)	0.0291*** (0.0042)	0.0297*** (0.0043)	0.0182*** (0.0037)
POST	0.0626*** (0.0039)	0.0643*** (0.0038)	0.0643*** (0.0038)	0.0653*** (0.0039)	0.0586*** (0.0031)
<b>IR * POST</b>	<b>-0.0411*** (0.0059)</b>	<b>-0.0412*** (0.0058)</b>	<b>-0.0411*** (0.0058)</b>	<b>-0.0420*** (0.0059)</b>	<b>-0.0212*** (0.0056)</b>
LEV	0.0000** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)
ISIZE	0.0002 (0.0011)	0.0002 (0.0011)	0.0002 (0.0011)	0.0003 (0.0011)	0.0001 (0.0009)
ROA	-0.0005* (0.0003)	-0.0005 (0.0003)	-0.0005 (0.0003)	-0.0005 (0.0003)	-0.0005* (0.0003)
MTB	0.0002 (0.0007)	-0.0002 (0.0007)	-0.0002 (0.0007)	-0.0002 (0.0007)	0.0006 (0.0007)
ESG Score	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0003*** (0.0001)	
ENFORC	-0.0295 (0.0194)			-0.0289 (0.0207)	-0.0318** (0.0151)

VARIABLES	(1) Ke CAPM 2	(2) Ke CAPM 2	(3) Ke CAPM 2	(4) Ke CAPM 2	(5) Ke CAPM 2
TRUST		-0.0042*** (0.0005)		0.0023*** (0.0002)	0.0024*** (0.0002)
STAKELAW			-0.0099*** (0.0012)	-0.0145*** (0.0015)	-0.0146*** (0.0013)
Constant	0.0817* (0.0427)	0.4131*** (0.0504)	0.1735*** (0.0292)	0.0801* (0.0429)	0.0715** (0.0361)
Observations	3,868	3,696	3,691	3,691	7,268
R-squared	0.3851	0.3967	0.3967	0.3975	0.3331
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

As with Sample ALL, the analysis for Sample IIRC (Table 13) shows a negative and statistically significant relationship between the cost of equity and Integrated Reporting adoption. Compared to Sample ALL, there was very little increase in the magnitude of the coefficients with R-squared also increasing, which indicates that the model can explain 39.7% of the variance in the cost of equity.

Cost of equity is also negatively correlated to the ESG Score, which is statistically significant, but not economically substantial. This is probably due to the fact that a small group of the companies engaged in Integrated Reporting already had an average Reporting Quality that was higher than the control group, making it difficult to identify the specific effect that caused the difference in report quality.

#### 4.1.3 Integrated Reporting, Cost of Equity and Enforcement

According to Liang and Renneboog (2017), enforcement is a company's strongest predictor of CSR efforts,. Therefore, Hypothesis 3a predicts that companies that adopted Integrated Reporting and operate in a country with high enforcement have a more substantial decrease in cost of equity than companies in low enforcement environments.

Table 14. IR, cost of equity and Enforcement – Sample ALL (H3a)

VARIABLES	(1) Ke CAPM ENF2	(2) Ke CAPM ENF2	(3) Ke CAPM ENF2	(4) Ke CAPM ENF2
IR	-0.0027 (0.0046)	-0.0057 (0.0047)	0.0073 (0.0079)	-0.0045 (0.0083)
POST	-0.0142*** (0.0021)	-0.0153*** (0.0022)	-0.0088* (0.0048)	-0.0146** (0.0067)
IR * POST	-0.0009 (0.0045)	0.0000 (0.0046)	-0.0110 (0.0083)	0.0028 (0.0095)
ENFORC	-0.0950***	-0.0966***	-0.0894***	-0.0979***

VARIABLES	(1) Ke CAPM ENF2	(2) Ke CAPM ENF2	(3) Ke CAPM ENF2	(4) Ke CAPM ENF2
	(0.0082)	(0.0082)	(0.0122)	(0.0132)
IR * ENFORC	0.0197***	0.0203***	0.0157***	0.0232***
	(0.0032)	(0.0031)	(0.0050)	(0.0052)
POST * ENFORC	0.0489***	0.0491***	0.0482***	0.0523***
	(0.0016)	(0.0016)	(0.0031)	(0.0042)
<b>IR * POST * ENFORC</b>	<b>-0.0232***</b>	<b>-0.0233***</b>	<b>-0.0222***</b>	<b>-0.0312***</b>
	<b>(0.0030)</b>	<b>(0.0030)</b>	<b>(0.0052)</b>	<b>(0.0059)</b>
ESG Score			-0.0002***	-0.0002***
			(0.0001)	(0.0001)
LEV		0.0000**	0.0000**	0.0000***
		(0.0000)	(0.0000)	(0.0000)
ISIZE		0.0013***	0.0008	0.0008
		(0.0004)	(0.0007)	(0.0007)
ROA		-0.0002	-0.0002	-0.0001
		(0.0001)	(0.0002)	(0.0002)
MTB		0.0012***	0.0006	0.0003
		(0.0004)	(0.0005)	(0.0005)
TRUST				0.0023***
				(0.0002)
STAKELAW				-0.0140***
				(0.0009)
Constant	0.1872***	0.1614***	0.1654***	0.1785***
	(0.0160)	(0.0182)	(0.0264)	(0.0270)
Observations	20,463	20,308	8,225	7,783
R-squared	0.3360	0.3404	0.3856	0.3914
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 14, Model 4, considers 7,783 firm-year observations and explains 39.14% of the variance in the cost of equity. The interaction term IR \* POST \* ENFORC is negative and significant ( $p < 0,01$ ), indicating that companies in high enforcement countries have a more substantial decrease in cost of equity after the adoption of Integrated Reporting.

Furthermore, we partitioned our sample in two groups based on whether they were in countries with high or low level of enforcement, and whether they were above or below the mean of the sample, as was the case in studies by Daske et al. (2008), H. A. Hong et al. (2014) and Zhou et al. (2016). Additionally, we analyzed the first (low enforcement) and fourth (high enforcement) quartile.

Table 15. IR, cost of equity and High and Low Enforcement – Sample ALL (H3a)

VARIABLES	(1) Ke CAPM HENF 1	(2) Ke CAPM LENF 1	(3) Ke CAPM Q4ENF 1	(4) Ke CAPM Q1ENF 1
IR	0.0377***	0.0076	0.0068*	-0.0047
	(0.0036)	(0.0049)	(0.0036)	(0.0075)
POST	0.0784***	0.0235***	0.0405***	-0.0309***
	(0.0027)	(0.0046)	(0.0027)	(0.0048)

VARIABLES	(1) Ke CAPM HENF 1	(2) Ke CAPM LENF 1	(3) Ke CAPM Q4ENF 1	(4) Ke CAPM Q1ENF 1
<b>IR * POST</b>	<b>-0.0576***</b> <b>(0.0042)</b>	<b>-0.0064</b> <b>(0.0067)</b>	<b>-0.0204***</b> <b>(0.0040)</b>	<b>0.0073</b> <b>(0.0078)</b>
LEV	0.0001*** (0.0000)	-0.0000* (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
ISIZE	0.0002 (0.0010)	0.0015 (0.0010)	0.0009 (0.0010)	0.0002 (0.0013)
ROA	-0.0002 (0.0002)	0.0000 (0.0004)	-0.0000 (0.0002)	-0.0009** (0.0004)
MTB	-0.0004 (0.0006)	0.0033*** (0.0011)	0.0015* (0.0008)	0.0021 (0.0013)
ESG Score	-0.0002** (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)	-0.0002 (0.0001)
ENFORC	-0.1953*** (0.0151)	0.1536*** (0.0179)	-0.1270*** (0.0154)	0.0561** (0.0267)
Constant	0.3661*** (0.0348)	-0.1843*** (0.0356)	0.2333*** (0.0360)	0.1783*** (0.0316)
Observations	5,537	2,688	2,581	1,234
R-squared	0.4391	0.3425	0.3642	0.4609
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 15, Model 1 shows the effect of Integrated Reporting adoption in a High Enforcement environment, considering a sample of 5,537 firm-year observations, and identifying countries as above or below average. For companies that adopt Integrated Reporting, the cost of capital decreases by 0.0576 Integrated Reporting in their post-adoption period, a result that is statistically significant at the 1% level. This model is capable of explaining 43.91% of the variance in the cost of equity. A similar interpretation can be applied to Model 3, when considering companies that are in countries within the top-quartile of Enforcement (Highest Enforcement).

Model 2 presents the analysis of the cost of equity for 2,688 firm-year observations in a Low Enforcement environment. Here, R-squared is 0.3425, but the coefficient for the interaction IR \* POST and for the IR coefficient are not significant. This indicates that the reduction of cost of capital in the post-adoption period for companies that adopted Integrated Reporting is only observable in companies within a High Enforcement environment (Chih et al., 2010; Dhaliwal et al., 2012; Frías-Aceituno et al., 2013). It should be noted that the interpretation of model 4 is similar.

#### 4.1.4 Integrated Reporting, Cost of Equity and Trust

Societal trust is important to understand contractual relations and capital market reactions (Kanagaretnam, Khokhar, et al., 2018; Nanda & Wysocki, 2011). Thus, Hypothesis 4a predicts that reduction in cost of equity for Integrated Reporting adopters in the period after adoption will be stronger for companies in countries with high societal trust.

Table 16. IR, cost of equity and Trust – Sample ALL (H4a)

VARIABLES	(1) Ke CAPM TRU2	(2) Ke CAPM TRU2	(3) Ke CAPM TRU2	(4) Ke CAPM TRU2
IR	-0.0246*** (0.0074)	-0.0289*** (0.0074)	0.0103 (0.0110)	0.0099 (0.0113)
POST	-0.0646*** (0.0061)	-0.0666*** (0.0061)	-0.0182* (0.0104)	-0.0261** (0.0107)
TRUST	-0.0055*** (0.0002)	-0.0053*** (0.0002)	-0.0050*** (0.0003)	0.0015*** (0.0002)
IR * POST	0.0331*** (0.0084)	0.0362*** (0.0084)	-0.0059 (0.0129)	-0.0052 (0.0134)
IR * TRUST	0.0006*** (0.0001)	0.0007*** (0.0001)	0.0002 (0.0002)	0.0003* (0.0002)
POST * TRUST	0.0016*** (0.0001)	0.0016*** (0.0001)	0.0011*** (0.0001)	0.0012*** (0.0001)
<b>IR * POST * TRUST</b>	<b>-0.0009*** (0.0001)</b>	<b>-0.0009*** (0.0001)</b>	<b>-0.0005*** (0.0002)</b>	<b>-0.0005*** (0.0002)</b>
LEV		0.0000*** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)
ISIZE		0.0013*** (0.0004)	0.0009 (0.0007)	0.0009 (0.0007)
ROA		-0.0001 (0.0001)	-0.0001 (0.0002)	-0.0001 (0.0002)
MTB		0.0009** (0.0004)	0.0004 (0.0005)	0.0004 (0.0005)
ESG Score			-0.0002*** (0.0001)	-0.0002*** (0.0001)
ENFORC				-0.0749*** (0.0131)
STAKELAW				-0.0135*** (0.0009)
Constant	0.5206*** (0.0206)	0.4731*** (0.0246)	0.4699*** (0.0303)	0.2010*** (0.0284)
Observations	18,986	18,892	7,805	7,783
R-squared	0.3464	0.3499	0.3887	0.3938
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 16 shows the test result for H4a. Model 4 considered 7,783 firm-year observations, with an R-squared of 0.3938, and a negative and statistically significant coefficient for the interaction IR \* POST \* TRUST, at the 1% level. This indicates that cost of equity is lower

for companies that adopted Integrated Reporting in environments with higher societal trust. The magnitude of the difference, however, is low, so it may not be economically significant. Also, Table 45, in Appendix E, presents the results for the Sample IIRC, for which the interaction term IR \* POST \* TRUST does not show statistical significance. Therefore, the data does not support Hypothesis 4a, but is aligned to the study by Kanagaretnam, Lee, et al. (2018), which found that, if there is an enforcement structure that can assure contract compliance and punish misstatements, investors lower their perceived importance of trust.

Table 17. IR, cost of equity and High and Low Trust – Sample ALL (H4a)

VARIABLES	(1) Ke CAPM HTRU 1	(2) Ke CAPM LTRU 1	(3) Ke CAPM Q4TRU 1	(4) Ke CAPM Q1TRU 1
IR	0.0126*** (0.0042)	0.0477*** (0.0043)	0.0016 (0.0050)	0.0036 (0.0068)
POST	0.0601*** (0.0040)	0.0671*** (0.0035)	0.0386*** (0.0032)	-0.0204*** (0.0048)
<b>IR * POST</b>	<b>-0.0211*** (0.0055)</b>	<b>-0.0674*** (0.0052)</b>	<b>-0.0122** (0.0053)</b>	<b>-0.0027 (0.0077)</b>
LEV	-0.0000 (0.0000)	0.0000*** (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
ISIZE	0.0034*** (0.0012)	-0.0011 (0.0009)	0.0015 (0.0012)	-0.0003 (0.0010)
ROA	0.0002 (0.0002)	-0.0005* (0.0002)	-0.0002 (0.0002)	-0.0005 (0.0004)
MTB	0.0035*** (0.0008)	-0.0003 (0.0006)	0.0028*** (0.0010)	0.0014 (0.0011)
ESG Score	-0.0002* (0.0001)	-0.0002*** (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)
ENFORC	-0.0912*** (0.0192)	-0.0012 (0.0169)	-0.2105*** (0.0225)	0.0060 (0.0234)
Constant	0.1140*** (0.0432)	0.0621* (0.0366)	0.3813*** (0.0491)	0.1688*** (0.0234)
Observations	2,918	4,887	2,059	1,404
R-squared	0.3200	0.4128	0.3247	0.4722
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

To further explore this issue, the same procedure was applied to the enforcement variable. We divided the sample into countries with high and low societal trust, considering countries that were above or below the average, respectively, also exploring the effect on the highest and lowest quartiles.

Table 17 shows that companies from both high and low societal trust environments (Models 1 and 2) showed a decrease in cost of equity for their post-adoption periods. However, when we analyzed the companies in the highest quartile (Model 3 – Quartile 4) we found a statistically

significant decrease in cost of equity, with a coefficient of -0.0122 at the 5% level. For companies in the lowest quartile (Model 4 – Quartile 1) the interaction term IR \* POST was not statistically significant. The results are consistent with the Nanda and Wysocki (2011) study proposition, in which investors perceive information as more credible and demand more information, resulting in a reduction of information asymmetry.

#### 4.1.5 Integrated Reporting, Cost of Equity and Stakeholder Orientation

Stakeholder-oriented countries have a higher number of actors legitimized to demand information from companies; this being the case, disclosure in this kind of environment is expected to be more informative and useful (Dhaliwal et al., 2012). Hypothesis 5a predicts that companies in a high stakeholder-oriented country will have a stronger reduction in the cost of equity after adopting Integrated Reporting.

Table 18. IR, cost of equity and Stakeholder Orientation – Sample ALL (H5a)

VARIABLES	(1) Ke CAPM SKL2	(2) Ke CAPM SKL2	(3) Ke CAPM SKL2	(4) Ke CAPM SKL2
IR	0.0395*** (0.0072)	0.0363*** (0.0072)	0.0691*** (0.0092)	0.0696*** (0.0093)
POST	0.0877*** (0.0049)	0.0866*** (0.0049)	0.1215*** (0.0066)	0.1224*** (0.0065)
IR * POST	-0.0642*** (0.0093)	-0.0623*** (0.0093)	-0.1007*** (0.0112)	-0.1013*** (0.0112)
STAKELAW	-0.0085*** (0.0005)	-0.0080*** (0.0005)	-0.0072*** (0.0006)	-0.0118*** (0.0009)
IR * STAKELAW	-0.0016*** (0.0004)	-0.0015*** (0.0004)	-0.0030*** (0.0006)	-0.0030*** (0.0006)
POST * STAKELAW	-0.0031*** (0.0003)	-0.0031*** (0.0003)	-0.0045*** (0.0004)	-0.0044*** (0.0004)
<b>IR * POST * STAKELAW</b>	<b>0.0028*** (0.0005)</b>	<b>0.0027*** (0.0005)</b>	<b>0.0043*** (0.0007)</b>	<b>0.0043*** (0.0007)</b>
LEV		0.0000*** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)
ISIZE		0.0012*** (0.0004)	0.0007 (0.0007)	0.0006 (0.0007)
ROA		-0.0001 (0.0001)	-0.0001 (0.0002)	-0.0001 (0.0002)
MTB		0.0012*** (0.0004)	0.0005 (0.0005)	0.0005 (0.0005)
ESG Score			-0.0002*** (0.0001)	-0.0002*** (0.0001)
ENFORC				-0.0331** (0.0131)
TRUST				0.0024*** (0.0002)
Constant	0.1630*** (0.0089)	0.1275*** (0.0133)	0.1284*** (0.0190)	0.0389 (0.0263)

VARIABLES	(1)	(2)	(3)	(4)
	Ke CAPM SKL2	Ke CAPM SKL2	Ke CAPM SKL2	Ke CAPM SKL2
Observations	18,882	18,806	7,783	7,783
R-squared	0.3171	0.3204	0.3882	0.3892
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Model 4, in Table 18, presents the results of the analysis for 7,783 firm-year observations, with an explained variance of 38.92%. The interaction term IR \* POST \* STAKELAW, which captures the variation in cost of equity for the post-adoption period of companies that adopt Integrated Reporting when considering their countries' differences in Stakeholder Orientation, showed a positive and significant coefficient, at the 1% level. The coefficient's magnitude, however, was small.

Table 19. IR, cost of equity and High and Low Stakeholder Orientation – Sample ALL (H5a)

VARIABLES	(1)	(2)	(3)	(4)
	Ke CAPM HSKL 1	Ke CAPM LSKL 1	Ke CAPM Q4SKL 1	Ke CAPM Q1SKL 1
IR	0.0057 (0.0041)	0.0408*** (0.0042)	0.0104** (0.0048)	0.0559*** (0.0102)
POST	0.0145*** (0.0032)	0.0958*** (0.0033)	0.0334*** (0.0038)	0.1084*** (0.0037)
<b>IR * POST</b>	<b>-0.0092*</b> <b>(0.0048)</b>	<b>-0.0598***</b> <b>(0.0057)</b>	<b>-0.0173***</b> <b>(0.0052)</b>	<b>-0.0709***</b> <b>(0.0123)</b>
LEV	0.0000 (0.0000)	0.0000** (0.0000)	0.0000 (0.0000)	0.0001*** (0.0000)
ISIZE	0.0009 (0.0008)	-0.0002 (0.0012)	0.0023 (0.0014)	-0.0039** (0.0019)
ROA	-0.0002 (0.0002)	-0.0002 (0.0003)	-0.0004 (0.0004)	-0.0007** (0.0003)
MTB	0.0023*** (0.0008)	-0.0006 (0.0007)	0.0016 (0.0010)	-0.0017** (0.0009)
ESG Score	-0.0000 (0.0001)	-0.0002** (0.0001)	0.0001 (0.0001)	-0.0002 (0.0001)
ENFORC	-0.0446** (0.0174)	-0.0078 (0.0163)	0.0900*** (0.0176)	-0.2582*** (0.0452)
Constant	0.1089*** (0.0339)	0.1065*** (0.0287)	-0.1924*** (0.0465)	0.2257*** (0.0494)
Observations	3,462	4,321	1,948	2,416
R-squared	0.2658	0.4658	0.3848	0.5003
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Results for the analysis of the Stakeholder Orientation subsamples point to a greater reduction in the cost of capital for companies in environments with Low Stakeholder Orientation, or Shareholder Oriented (Models 2 and 4), than for companies in High Stakeholder Orientation

(Models 1 and 3). This may be related to the fact that Stakeholder Oriented countries already had a higher level of non-financial disclosure (Dhaliwal et al., 2012). Therefore, companies in countries with Low Stakeholder Orientation had more of an informational increase with the adoption of the integrated report. From another perspective, it may be that the Integrated Report is a type of communication that focuses primarily on capital providers and aims to disclose financial and non-financial information that meets their informational needs, while also improving resource allocations (IIRC, 2013) and allowing these users access to more pertinent information about the long-term results of the organization. Consequently, companies in Shareholder Oriented countries had a higher decrease in their cost of equity.

All of the models were re-analyzed using the dependent variable with logarithmical transformation and showed no significant qualitative changes in the results, which indicates that the distribution is converging asymptotically to normal distribution, as stated by the Central Limit Theorem.

## 4.2 Cost of Debt

To test for Hypothesis 2, we analyzed if there were differences in the cost of debt for companies that adopted Integrated Reporting when compared to non-adopters. Firstly, we conducted correlation and univariate analyses, basic procedures that help us understand, step-by-step, the studied relationship. Next, we conducted multivariate analyses, a more robust procedure that allows for control of multiple factors that can influence the relationship.

### 4.2.1 Correlation and Principal Components Analysis (PCA)

Table 20 shows Pearson correlation for Ki Net and Rating, with the main variables of interest and controls. The cost of debt (Ki Net) is not related to IR \* POST, which constitutes an initial evidence for H2, implying that cost of debt is not related to Integrated Reporting adoption. However, the cost of debt (Ki Net) is negatively related to ESG \* IR \* POST and to ENFORC \* IR \* POST, at a 10% level of significance, which is in line with our argumentation that companies in high enforcement environments are expected to observe a reduction in cost of debt after the adoption of Integrated Reporting, and that ESG performance affects the relationship between cost of debt and Integrated Reporting adoption. The credit rating is positively related to IR \* POST and to all the triple interactions with institutional factors, at a level of 1%, indicating that credit rating is related to Integrated Reporting adoption.

Table 20. Correlation Matrix Ki Net – Sample ALL

	1	2	3	4	5	6	7	8	9	10	11	12
1 ke CAPM	1											
2 Rating	-0.202***	1										
3 ir_post	-0.0304	0.0882***	1									
4 esg_ir_post	-0.0323*	0.0960***	0.983***	1								
5 enforce_ir_post	-0.0394*	0.0751***	0.890***	0.887***	1							
6 trust_ir_post	-0.0291	0.0773***	0.925***	0.917***	0.953***	1						
7 stakel_ir_post	-0.0202	0.0723***	0.941***	0.929***	0.864***	0.903***	1					
8 lev	-0.0356*	-0.206***	-0.00724	-0.0100	-0.0504**	-0.0505**	-0.00229	1				
9 lsize	-0.327***	0.440***	0.0927***	0.0983***	0.0609***	0.0813***	0.0588***	-0.0185	1			
10 roa	0.137***	0.267***	0.00955	0.0168	0.0191	0.0301	0.0185	-0.222***	-0.0446**	1		
11 mtb	0.144***	0.0517**	0.00802	0.0147	0.0282	0.0328*	0.0137	0.217***	-0.206***	0.440***	1	
12 Esg_score	-0.0272	0.163***	0.263***	0.313***	0.254***	0.256***	0.255***	-	0.181***	0.0945***	0.0814***	1
13 Enforcement	-0.0390*	-	-	-0.0458**	0.189***	0.0952***	-0.0267	-	-0.211***	0.0270	0.0652***	0.0430**
		0.0876***	0.0611***					0.0539***	0.0729***			

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

In Table 21, results from the univariate analyses show the behavior of cost of debt for both the treatment group and control group, in the periods before and after the adoption of Integrated Reporting.

Table 21. Univariate analysis – Sample ALL

		<i>N</i>	<i>Cost of debt</i>	<i>N</i>	<i>Rating</i>
<b>Panel A – Treatment Pre- versus Control Pre-</b>					
TREATED PRE IR	(1)	1,539	0.03962	875	20.4514
CONTROL PRE IR	(2)	5,557	0.04251	2,001	18.8006
Difference	(1) – (2)		<b>-0.04189</b>		<b>1.6508</b>
One sided <i>p</i> -value			0.0151		0.0000
<b>Panel B - Treatment Post- versus Control Post-</b>					
TREATED POST IR	(1)	2,237	0.03604	1,250	20.1128
CONTROL POST IR	(2)	10,066	0.03708	4,111	19.0043
Difference	(1) – (2)		<b>-0.00104</b>		<b>1.1084</b>
One sided <i>p</i> -value			0.2418		0.0000

Results from the univariate analyses show that before the adoption of Integrated Reporting the IR adopters had a lower average cost of debt when compared to the control group. In the period after the adoption, however, the relation is negative, but not statistically significant. The Rating of the IR adopters group is higher than the control group, both before and after the adoption. However, the control group presented an increase in its average rating, from 18.8006 to 19.0043, while the IR adopters group rating showed a small decrease, from 20.4514 to 20.1128. Such results are preliminary evidence that contradicts H2, which states that the adoption of Integrated Reporting is associated with cost of debt.

#### 4.2.2 Integrated Reporting and Cost of Debt

Hypothesis 2 states that cost of debt is related to Integrated Reporting adoption, since it decreases the risk of the investment, due to the reduction of information asymmetry and improvement on non-financial performance. However, the informational need of investors and creditors are different. Creditors are concerned with the potential of the organization to generate cash flow, diminishing the weight on long-term orientation and disclosure.

Table 22. IR and cost of debt – Sample ALL (H2)

VARIABLES	(1) Ki Net 1	(2) Ki Net 1	(3) Ki Net 1	(4) Ki Net 1	(5) Ki Net 1
IR	-0.0033* (0.0017)	-0.0000 (0.0018)	-0.0004 (0.0018)	-0.0005 (0.0018)	-0.0021 (0.0022)
POST	-0.0052*** (0.0007)	-0.0043*** (0.0007)	-0.0044*** (0.0007)	-0.0046*** (0.0007)	-0.0047*** (0.0012)
<b>IR * POST</b>	<b>-0.0020 (0.0019)</b>	<b>-0.0027 (0.0019)</b>	<b>-0.0026 (0.0018)</b>	<b>-0.0025 (0.0018)</b>	<b>-0.0002 (0.0024)</b>
LEV		-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)
ISIZE		-0.0030*** (0.0004)	-0.0030*** (0.0004)	-0.0029*** (0.0004)	-0.0036*** (0.0009)
ROA				-0.0001 (0.0001)	0.0003** (0.0001)
MTB			0.0011*** (0.0004)	0.0012*** (0.0004)	0.0005 (0.0006)
<b>ESG Score</b>					<b>-0.0000 (0.0001)</b>
Constant	0.0710*** (0.0061)	0.1371*** (0.0102)	0.1362*** (0.0104)	0.1353*** (0.0104)	0.1418*** (0.0181)
Observations	19,399	19,399	18,723	18,723	7,535
R-squared	0.1803	0.2033	0.2044	0.2047	0.1726
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 22 shows the results for the Ki Net of IR adopters in the period after the adoption as compared to themselves, in the period before the adoption, and to the control group. Model 1 shows the results for the entire sample considering 19,399 firm-year observations, with an explained variance of 18.03%, a negative coefficient, but no statistical significance, contradicting Hypothesis 2a. Furthermore, this conclusion can also be applied to Model 5 results, which considered firm level controls and 7,535 firm-year observations, with an R-squared of 0.1726.

Table 23. IR, cost of debt and institutional factors – Sample ALL (H2)

VARIABLES	(1) Ki Net 2	(2) Ki Net 2	(3) Ki Net 2	(4) Ki Net 2	(5) Ki Net 2
IR	-0.0019 (0.0022)	-0.0028 (0.0023)	-0.0028 (0.0023)	-0.0025 (0.0023)	-0.0009 (0.0019)
POST	-0.0043*** (0.0012)	-0.0051*** (0.0012)	-0.0051*** (0.0012)	-0.0047*** (0.0012)	-0.0044*** (0.0008)
<b>IR * POST</b>	<b>-0.0005 (0.0024)</b>	<b>0.0005 (0.0025)</b>	<b>0.0007 (0.0025)</b>	<b>0.0003 (0.0025)</b>	<b>-0.0026 (0.0019)</b>
LEV	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0001*** (0.0000)
ISIZE	-0.0036*** (0.0009)	-0.0036*** (0.0009)	-0.0036*** (0.0009)	-0.0036*** (0.0009)	-0.0029*** (0.0004)
ROA	0.0003**	0.0003**	0.0004**	0.0003**	-0.0001

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Ki Net 2	Ki Net 2	Ki Net 2	Ki Net 2	Ki Net 2
	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0001)
MTB	0.0005	0.0007	0.0007	0.0007	0.0014***
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0004)
<b>ESG Score</b>	<b>-0.0000</b>	<b>-0.0000</b>	<b>-0.0000</b>	<b>-0.0000</b>	
	<b>(0.0001)</b>	<b>(0.0001)</b>	<b>(0.0001)</b>	<b>(0.0001)</b>	
ENFORC	-0.0096*			-0.0127**	-0.0105***
	(0.0055)			(0.0055)	(0.0031)
TRUST		0.0007*		-0.0002	-0.0001
		(0.0004)		(0.0002)	(0.0002)
STAKELAW			0.0016*	0.0024***	0.0025***
			(0.0008)	(0.0009)	(0.0008)
Constant	0.1588***	0.0816**	0.1195***	0.1486***	0.1257***
	(0.0206)	(0.0364)	(0.0216)	(0.0273)	(0.0181)
Observations	7,535	7,163	7,144	7,144	17,255
R-squared	0.1729	0.1743	0.1744	0.1749	0.2032
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 23 shows the test results for H2, including country level controls. Model 4 uses 7,144 firm-year observations, with an explained variance of 17.49% for Ki Net. It is possible to observe that the coefficient for the interaction IR \* POST is rather small (0.0003) and not statistically significant; the variable that indicates Integrated Reporting adopters, namely IR, is negative (-0.0025) and also not statistically significant. The ESG Score is negative and significant, but the coefficient is near zero. All of which is evidence that do not corroborates Hypothesis 2.

In the presence of the other variables, Leverage and ISize are negative and statistically significant, a fact that matches the prediction considering that lower leverage and bigger companies should yield less risk for lenders (Chava, 2014; Sharfman & Fernando, 2008). ROA is positive and significant, although the literature is not conclusive about the effect of profitability (Aman & Nguyen, 2013; Bauer & Hann, 2010). Nevertheless, all of these coefficients are not economically significant.

Enforcement is negative and statistically significant, and is the variable with the highest coefficient in Model 4, apart from the constant; it represents a reduction of 0.0127 for each unit in the enforcement measure – Rule of law. This evidence indicates that a country's enforcement level is related to the cost of debt. Trust is negative and non-significant, whereas Stakeholder Orientation is positive and significant, but with a low coefficient.

Table 24. IR and cost of debt (credit rating) – Sample ALL (H2)

VARIABLES	(1) Rating 1	(2) Rating 1	(3) Rating 1	(4) Rating 1	(5) Rating 1
<b>IR</b>	<b>1.2345***</b> <b>(0.1933)</b>	<b>0.6272***</b> <b>(0.1940)</b>	<b>0.5462***</b> <b>(0.1869)</b>	<b>0.6114***</b> <b>(0.1840)</b>	<b>0.2518</b> <b>(0.2028)</b>
POST	0.2323** (0.0918)	0.1937** (0.0885)	0.0524 (0.0908)	0.1845** (0.0915)	0.1527 (0.1098)
<b>IR * POST</b>	<b>-0.2184</b> <b>(0.1895)</b>	<b>-0.1930</b> <b>(0.1842)</b>	<b>-0.2114</b> <b>(0.1810)</b>	<b>-0.2885</b> <b>(0.1783)</b>	<b>-0.0273</b> <b>(0.1996)</b>
LEV		-0.0094*** (0.0009)	-0.0112*** (0.0009)	-0.0090*** (0.0009)	-0.0080*** (0.0011)
ISIZE		0.7725*** (0.0594)	0.7746*** (0.0571)	0.7515*** (0.0555)	0.6202*** (0.0848)
ROA				0.1101*** (0.0141)	0.1060*** (0.0145)
MTB			0.4202*** (0.0368)	0.2741*** (0.0395)	0.2124*** (0.0446)
<b>ESG Score</b>					<b>0.0191***</b> <b>(0.0045)</b>
Constant	16.4981*** (0.7012)	-0.0686 (1.4354)	-0.2658 (1.3934)	-0.1859 (1.3530)	2.1988 (1.8796)
Observations	8,237	8,237	8,116	8,116	4,517
R-squared	0.2302	0.3285	0.3591	0.3753	0.3980
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 24 shows regression results for a firm's credit ratings, so that a higher credit rating is a proxy for a lower cost of debt. We can observe that the coefficient IR \* POST is negative relative to the credit rating, but it is not significant. In Models 1 thru 4, however, the IR coefficient is positive, indicating that, in general, Integrated Reporting adopters have a higher credit rating.

Model 5, however, shows that the IR coefficient is not significant, but the ESG Score, which is a proxy for Integrated Reporting quality, is positive and significantly related to credit rating. This can indicate that lenders are more attentive to the content of the reports, and their reaction to the disclosure will be different from that of the equity holders.

Control variables behave as predicted in previous literature: leverage (LEV) is negatively correlated to credit rating, indicating that it increases the perception of risk; and size (ISIZE), profitability (ROA) and Market-to-Book (MTB) are positively correlated to credit rating, showing that it represents a lesser risk of default (Botosan, 2006; Chava, 2014; Sharfman & Fernando, 2008).

Table 25. IR, cost of debt (credit rating) and institutional factors – Sample ALL (H2)

VARIABLES	(1) Rating 2	(2) Rating 2	(3) Rating 2	(4) Rating 2	(5) Rating 2
IR	0.2430 (0.2030)	0.2264 (0.2122)	0.2262 (0.2123)	0.2187 (0.2124)	0.5525*** (0.1878)
POST	0.1383 (0.1133)	0.1347 (0.1117)	0.1347 (0.1117)	0.1223 (0.1154)	0.0943 (0.0933)
<b>IR * POST</b>	<b>-0.0150</b> <b>(0.2002)</b>	<b>0.0183</b> <b>(0.2051)</b>	<b>0.0176</b> <b>(0.2052)</b>	<b>0.0278</b> <b>(0.2057)</b>	<b>-0.2045</b> <b>(0.1816)</b>
LEV	-0.0080*** (0.0011)	-0.0090*** (0.0010)	-0.0090*** (0.0010)	-0.0090*** (0.0010)	-0.0100*** (0.0008)
ISIZE	0.6199*** (0.0848)	0.6823*** (0.0734)	0.6821*** (0.0735)	0.6820*** (0.0735)	0.8161*** (0.0542)
ROA	0.1061*** (0.0146)	0.1034*** (0.0149)	0.1033*** (0.0149)	0.1034*** (0.0149)	0.1085*** (0.0145)
MTB	0.2121*** (0.0447)	0.2377*** (0.0444)	0.2379*** (0.0444)	0.2376*** (0.0444)	0.3087*** (0.0394)
<b>ESG Score</b>	<b>0.0191***</b> <b>(0.0045)</b>	<b>0.0169***</b> <b>(0.0044)</b>	<b>0.0169***</b> <b>(0.0044)</b>	<b>0.0168***</b> <b>(0.0044)</b>	
ENFORC	0.4427 (0.5512)			0.3851 (0.5484)	0.4189 (0.3922)
TRUST		-0.0050 (0.0224)		0.0026 (0.0156)	-0.0149 (0.0149)
STAKELAW			-0.0116 (0.0530)	-0.0288 (0.0672)	0.0617 (0.0634)
Constant	1.4222 (2.0306)	1.4525 (2.5696)	1.1751 (1.7999)	0.5131 (2.1073)	-1.9031 (1.7412)
Observations	4,517	4,276	4,263	4,263	7,487
R-squared	0.3981	0.4111	0.4102	0.4103	0.4228
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 25 shows the results of the regression after controlling for the three institutional factors (Enforcement, Trust and Stakeholder Orientation). Model 4 takes into account 4,263 firm-year observations, with an R-squared of 0.4103. The result of the coefficient IR \* POST is positive and not significant. As discussed before, the ESG Score, a proxy of Integrated Reporting quality, is positive and significant at a 1% level. These results are consistent with Bauer and Hann (2010) and La Rosa et al. (2018), studies that indicated that a better disclosure is related to credit rating, but depends on the setting.

The institutional factors Enforcement, Trust and Stakeholder Orientation are not statistically significant in any the model.

### 4.2.3 Integrated Reporting, Cost of Debt and Enforcement

Literature has not reached a consensus regarding the effects of disclosure in the cost of debt when mediated by the country's level of enforcement (Laeven & Majnoni, 2005; Pinheiro & Cabral, 1999; Qian et al., 2018). Therefore, Hypothesis 3b predicts that Integrated Reporting disclosure is associated with the cost of debt, and the relationship is stronger in countries with higher level of enforcement.

Table 26. IR, cost of debt and Enforcement – Sample ALL (H3b)

VARIABLES	(1) Ki Net ENF2	(2) Ki Net ENF2	(3) Ki Net ENF2	(4) Ki Net ENF2
IR	-0.0015 (0.0032)	0.0006 (0.0034)	0.0024 (0.0048)	0.0013 (0.0070)
POST	-0.0031** (0.0015)	-0.0014 (0.0015)	0.0024 (0.0029)	0.0012 (0.0043)
IR * POST	-0.0032 (0.0039)	-0.0043 (0.0039)	-0.0062 (0.0053)	-0.0039 (0.0073)
ENFORC	-0.0071** (0.0032)	-0.0058* (0.0032)	-0.0046 (0.0058)	-0.0079 (0.0062)
IR * ENFORC	-0.0014 (0.0023)	-0.0008 (0.0023)	-0.0031 (0.0031)	-0.0027 (0.0045)
POST * ENFORC	-0.0015 (0.0011)	-0.0024** (0.0011)	-0.0049** (0.0019)	-0.0040 (0.0028)
<b>IR * POST * ENFORC</b>	<b>0.0009 (0.0028)</b>	<b>0.0013 (0.0028)</b>	<b>0.0041 (0.0034)</b>	<b>0.0029 (0.0046)</b>
LEV		-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)
ISIZE		-0.0029*** (0.0004)	-0.0036*** (0.0009)	-0.0036*** (0.0009)
ROA		-0.0001 (0.0001)	0.0003** (0.0001)	0.0003** (0.0002)
MTB		0.0013*** (0.0004)	0.0005 (0.0006)	0.0007 (0.0006)
<b>ESG Score</b>			<b>-0.0000 (0.0001)</b>	<b>-0.0000 (0.0001)</b>
TRUST				-0.0002 (0.0002)
STAKELAW				0.0024*** (0.0009)
Constant	0.0842*** (0.0083)	0.1465*** (0.0118)	0.1518*** (0.0209)	0.1415*** (0.0278)
Observations	19,399	18,723	7,535	7,144
R-squared	0.1808	0.2053	0.1739	0.1753
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Model 4, in Table 26, considers 7,144 firm-year observations, yielding an R-squared of 0.1753. Results of the triple interaction IR \* POST \* ENFORC and the coefficient ESG Score

are not statistically significant, contradicting H3b. The size of the company is negative and significant at a level of 1%, but the magnitude of the coefficient is small. Considering all control variables, Stakeholder Orientation is positive and significant at the 1% level, but the magnitude of the coefficient is small, especially considering that the interest rate spread varies by US\$2,400 for each unit of the stakeholder orientation score – note that all variable are in millions of dollars.

Table 27. IR, cost of debt and High and Low Enforcement – Sample ALL (H3b)

VARIABLES	(1) Ki Net HENF 1	(2) Ki Net LENF 1	(3) Ki Net Q4ENF 1	(4) Ki Net Q1ENF 1
IR	-0.0052* (0.0031)	0.0016 (0.0027)	-0.0059 (0.0039)	0.0017 (0.0053)
POST	-0.0061*** (0.0016)	-0.0023 (0.0015)	-0.0043* (0.0024)	0.0014 (0.0032)
<b>IR * POST</b>	<b>0.0030</b> <b>(0.0032)</b>	<b>-0.0044</b> <b>(0.0031)</b>	<b>0.0023</b> <b>(0.0038)</b>	<b>-0.0040</b> <b>(0.0057)</b>
LEV	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0001*** (0.0000)	-0.0001** (0.0000)
ISIZE	-0.0046*** (0.0012)	-0.0013 (0.0009)	-0.0064*** (0.0013)	-0.0019 (0.0021)
ROA	0.0003* (0.0002)	0.0003* (0.0002)	0.0005** (0.0002)	0.0005 (0.0003)
MTB	0.0009 (0.0007)	0.0002 (0.0008)	0.0014 (0.0012)	0.0002 (0.0011)
<b>ESG Score</b>	<b>-0.0000</b> <b>(0.0001)</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0001)</b>	<b>0.0000</b> <b>(0.0001)</b>
ENFORC	-0.0098 (0.0083)	-0.0139 (0.0086)	-0.0227* (0.0127)	-0.0022 (0.0163)
Constant	0.1855*** (0.0302)	0.0785*** (0.0240)	0.2409*** (0.0356)	0.1015** (0.0511)
Observations	5,015	2,520	2,301	1,131
R-squared	0.1263	0.3224	0.1656	0.2256
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 27 shows the results for testing subsamples for companies in high (Model 1) and low (Model 2) enforcement environments, and highest (Model 3) and lowest (Model 4) enforcement scores. All of them resulting in non-significant IR \* POST and ESG Score coefficients, findings that contradicted H3b.

The effect of the size of the company in the reduction of cost of debt is observed only for companies in a high enforcement environment (Models 1 and 3), in the presence of the other controls within the models.

Table 28. IR, cost of debt (credit rating) and Enforcement – Sample ALL (H3b)

VARIABLES	(1) Rating ENF2	(2) Rating ENF2	(3) Rating ENF2	(4) Rating ENF2
IR	1.0525** (0.4971)	1.0880** (0.4909)	0.8580 (0.6285)	1.0988 (0.8505)
POST	-0.0196 (0.2766)	0.3184 (0.3057)	0.1370 (0.3854)	0.0586 (0.5976)
IR * POST	-0.1872 (0.4781)	-0.8570* (0.4869)	-0.5127 (0.6390)	-0.4820 (0.8675)
ENFORC	1.1494** (0.4682)	1.0878** (0.4490)	0.4546 (0.5829)	0.3844 (0.6231)
IR * ENFORC	0.1268 (0.3501)	-0.4323 (0.3392)	-0.4805 (0.4240)	-0.6531 (0.5618)
POST * ENFORC	0.1614 (0.1857)	-0.1401 (0.1999)	-0.0002 (0.2469)	0.0416 (0.3811)
<b>IR * POST * ENFORC</b>	<b>0.0247</b> <b>(0.3235)</b>	<b>0.5196</b> <b>(0.3218)</b>	<b>0.3857</b> <b>(0.4148)</b>	<b>0.3813</b> <b>(0.5587)</b>
LEV		-0.0090*** (0.0009)	-0.0080*** (0.0011)	-0.0091*** (0.0010)
ISIZE		0.7531*** (0.0558)	0.6256*** (0.0853)	0.6948*** (0.0716)
ROA		0.1106*** (0.0141)	0.1062*** (0.0145)	0.1033*** (0.0148)
MTB		0.2744*** (0.0393)	0.2126*** (0.0445)	0.2392*** (0.0439)
<b>ESG Score</b>			<b>0.0190***</b> <b>(0.0045)</b>	<b>0.0162***</b> <b>(0.0043)</b>
TRUST				-0.0001 (0.0156)
STAKELAW				-0.0121 (0.0661)
Constant	14.3815*** (1.0558)	-2.0682 (1.5216)	1.3284 (2.1087)	0.3197 (2.1381)
Observations	8,237	8,116	4,517	4,263
R-squared	0.2313	0.3762	0.3989	0.4116
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Hypothesis 3b predicted that Integrated Reporting would be associated with cost of debt. Table 28 shows the results of the tests using credit rating to measure cost of debt. In all models the interaction IR \* POST \* ENFORC is not significant, rejecting H3b. The coefficient ESG Score – used as a proxy for Integrated Reporting quality – is positive and significant. As proposed by Bae and Goyal (2009), Laeven and Majnoni (2005) and Qian et al. (2018), disclosure and enforcement may not be a factor in the interest rate spread, but it may be a factor in other characteristics of the contract, in this case, in the credit rating.

Table 29. IR, cost of debt (credit rating) and High and Low Enforcement – Sample ALL (H3b)

VARIABLES	(1) Rating HENF 1	(2) Rating LENF 1	(3) Rating Q4ENF 1	(4) Rating Q1ENF 1
IR	0.1657 (0.2824)	0.3346 (0.2801)	0.3171 (0.4003)	1.4212** (0.6159)
POST	0.3542*** (0.1232)	-0.0324 (0.2166)	0.3043 (0.2506)	0.2539 (0.4508)
<b>IR * POST</b>	<b>-0.0091 (0.2527)</b>	<b>0.0992 (0.3166)</b>	<b>-0.0315 (0.3410)</b>	<b>-0.7150 (0.6708)</b>
LEV	-0.0105*** (0.0011)	-0.0057*** (0.0019)	-0.0119*** (0.0020)	-0.0068** (0.0033)
ISIZE	0.9038*** (0.0842)	0.3264*** (0.1245)	1.2220*** (0.1392)	-0.1345 (0.2443)
ROA	0.1036*** (0.0164)	0.1022*** (0.0300)	0.0749*** (0.0236)	0.0898* (0.0486)
MTB	0.2481*** (0.0480)	0.1370 (0.1051)	0.3192*** (0.0807)	0.0687 (0.1720)
<b>ESG Score</b>	<b>0.0175*** (0.0051)</b>	<b>0.0076 (0.0080)</b>	<b>0.0023 (0.0105)</b>	<b>0.0348** (0.0156)</b>
ENFORC	1.3374* (0.7047)	0.0762 (1.0777)	-1.7357 (1.1943)	0.1213 (2.3500)
Constant	-6.9154*** (2.2425)	11.5524*** (3.0747)	-7.8089** (3.8561)	20.7441*** (6.0430)
Observations	2,765	1,752	984	714
R-squared	0.4512	0.3183	0.5090	0.2869
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The analysis that considered high and low enforcement (Table 29, Models 1 and 2), and highest and lowest quartile (Table 29, Models 3 and 4) also resulted in a non-significant IR \* POST interaction. However, in Model 1, the coefficient of ESG Score is significant, with 2,765 firm-year observations and an R-squared of 0.4512. This, in essence, is initial evidence that, in a high enforcement environment, the higher the quality of Integrated Reporting, the higher the company's credit rating. Surprisingly enough, the last quartile's ESG Score (Model 4) is also significant, 714 firm-year observations and an explained variance of 28.69%. Although results should be considered carefully due to a reduced number of observations, they provide evidence that the quality of Integrated Reporting provided by companies in a very low enforcement environment Integrated Reporting is recognized by lenders.

#### 4.2.4 Integrated Reporting, Cost of Debt and Trust

Societal Trust is an institutional factor that can be related to and mediate the relationship between Integrated Reporting adoption and cost of debt. Nevertheless, Qian et al. (2018)

provided evidence that formal institutions have substitutive effects on cost of debt with informal institutions, like societal trust. Thus, H4b states that Integrated Reporting disclosure is associated with cost of debt, depending on the country's level of Trust.

Table 30. IR, cost of debt and Trust – Sample ALL (H4b)

VARIABLES	(1) Ki Net TRU2	(2) Ki Net TRU2	(3) Ki Net TRU2	(4) Ki Net TRU2
IR	-0.0047 (0.0053)	-0.0031 (0.0054)	-0.0006 (0.0065)	-0.0006 (0.0065)
POST	-0.0035 (0.0025)	-0.0021 (0.0026)	0.0021 (0.0038)	0.0008 (0.0038)
TRUST	-0.0007** (0.0004)	-0.0006 (0.0004)	0.0007** (0.0004)	-0.0002 (0.0002)
IR * POST	-0.0047 (0.0057)	-0.0053 (0.0057)	-0.0055 (0.0072)	-0.0047 (0.0072)
IR * TRUST	0.0000 (0.0001)	0.0000 (0.0001)	-0.0000 (0.0001)	-0.0000 (0.0001)
POST * TRUST	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0001** (0.0000)	-0.0001 (0.0000)
<b>IR * POST * TRUST</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0001)</b>
LEV		-0.0001*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)
ISIZE		-0.0029*** (0.0004)	-0.0037*** (0.0009)	-0.0037*** (0.0009)
ROA		-0.0001 (0.0001)	0.0004** (0.0002)	0.0004** (0.0002)
MTB		0.0014*** (0.0004)	0.0007 (0.0006)	0.0007 (0.0006)
<b>ESG Score</b>			<b>-0.0000</b> <b>(0.0001)</b>	<b>-0.0000</b> <b>(0.0001)</b>
ENFORC				-0.0108* (0.0057)
STAKELAW				0.0023*** (0.0009)
Constant	0.1370*** (0.0322)	0.1876*** (0.0350)	0.0782** (0.0365)	0.1429*** (0.0276)
Observations	17,876	17,346	7,163	7,144
R-squared	0.1820	0.2060	0.1748	0.1752
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Contradicting H4b, the triple interaction IR \* POST \* TRUST is not significant in any of the models presented in Table 30, the same being the case for the coefficient ESG Score. This evidence does not corroborate H4b, which states that the adoption of Integrated Reporting is related to cost of debt.

We tested the interest rate spread, subsampled by High and Low Trust environments, and the credit ratings, both for the entire sample and for the subsamples of High and Low Trust environments. The results are qualitatively similar to the analysis presented here, thus, the

results are reported in Tables 53, 54, 69 and 70, in Appendix H. Results pertaining to the association between credit rating and Integrated Reporting and to the coefficient of ESG Score, which is used as a proxy for Integrated Reporting quality, were both significant, but only for firms located in a low Trust environment.

#### 4.2.5 Integrated Reporting, Cost of Debt and Stakeholder Orientation

Stakeholder Orientation is an institutional factor that can influence the behavior of decision-makers. That being the case, we decided to investigate its mediator effect in the relationship between Integrated Reporting disclosure and cost of debt. The literature, however, is not consistent about the effect of non-financial information in the cost of debt, one reason being that the information needs of debtholders and equity holders are different, with different reactions to the same information (Silva et al., 2017).

Table 31. IR, cost of debt and Stakeholder Orientation – Sample ALL (H5b)

VARIABLES	(1) Ki net SKL2	(2) Ki net SKL2	(3) Ki net SKL2	(4) Ki net SKL2
IR	-0.0002 (0.0058)	0.0007 (0.0055)	-0.0007 (0.0064)	-0.0005 (0.0064)
POST	-0.0062*** (0.0021)	-0.0055** (0.0022)	-0.0070** (0.0031)	-0.0066** (0.0031)
IR * POST	-0.0053 (0.0063)	-0.0048 (0.0059)	-0.0021 (0.0075)	-0.0024 (0.0075)
STAKELAW	0.0023*** (0.0008)	0.0019** (0.0008)	0.0015* (0.0008)	0.0023** (0.0009)
IR * STAKELAW	-0.0002 (0.0004)	-0.0001 (0.0003)	-0.0001 (0.0004)	-0.0001 (0.0004)
POST * STAKELAW	0.0001 (0.0001)	0.0001 (0.0001)	0.0001 (0.0002)	0.0001 (0.0002)
<b>IR * POST * STAKELAW</b>	<b>0.0002 (0.0004)</b>	<b>0.0002 (0.0004)</b>	<b>0.0001 (0.0004)</b>	<b>0.0001 (0.0004)</b>
LEV		-0.0001*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)
ISIZE		-0.0029*** (0.0004)	-0.0036*** (0.0009)	-0.0036*** (0.0009)
ROA		-0.0001 (0.0001)	0.0004** (0.0002)	0.0003** (0.0002)
MTB		0.0014*** (0.0004)	0.0007 (0.0006)	0.0007 (0.0006)
ESG Score			-0.0000 (0.0001)	-0.0000 (0.0001)
ENFORC				-0.0127** (0.0055)
TRUST				-0.0002 (0.0002)
Constant	0.0367*** (0.0091)	0.1051*** (0.0123)	0.1209*** (0.0214)	0.1500*** (0.0272)

VARIABLES	(1)	(2)	(3)	(4)
	Ki net SKL2	Ki net SKL2	Ki net SKL2	Ki net SKL2
Observations	17,769	17,255	7,144	7,144
R-squared	0.1787	0.2029	0.1746	0.1751
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 31 shows the results for the analysis of the interest rate spread in the period after the adoption for companies that adopt Integrated Reporting, taking into account their countries' level of stakeholder orientation. The triple interaction IR \* POST \* STAKELAW is not significant in any of the models, a result that do not confirms Hypothesis 5b, which states that Integrated Reporting disclosure is associated with the cost of debt, depending on the level of Stakeholder Orientation.

Test results for the relationship between <IR> and credit rating, and for the subsample High and Low Stakeholder Orientation (interest rate spread and credit rating) also contradicted H5b, and are reported in the Appendix H, whose Table 85 shows the results for credit rating. In it, Model 4 uses 4,263 firm-year observations, with R-squared being 0.4113, and the triple interaction term IR \* POST \* STAKELAW showing no significance, all of which is in line with the findings of Suto and Takehara (2017). It is worth noting, however, that the coefficient of ESG Score is positive and significant. Nevertheless, when considering the results for the subsamples High and Low Stakeholder Orientation (Table 86 - Appendix H), only the companies in countries that are more Shareholder Oriented have a positive and significant relationship between ESG Score and Credit Rating. That can indicate that more lenders in shareholder oriented countries react to quality of Integrated Reporting. This is relevant especially because <IR> is a publication focused on financial capital providers (IIRC, 2013).

#### 4.2.6 Additional tests - Integrated Reporting, Cost of Debt and Assurance

To better understand the relationship between Integrated Reporting disclosure and cost of debt, we ran additional tests to investigate the role of Assurance procedures in this relationship.

Assurance procedures in Integrated Reporting are implemented by companies in an effort to increase the credibility of the information (Simnett et al., 2009). In Table 32, Panel A presents

the frequency of reports submitted to CSR Assurance, and Panel B shows the frequency of the assurance being performed by one of the Big 4 firms (PWC, KPMG, EY and Deloitte).

Table 32. Frequency of Assurance – Sample ALL

Description	(1)	(2)	(3)	(4)
	Pre-adoption		Post-adoption	
	Control	Treatment	Control	Treatment
	Freq	Freq	Freq	Freq
<b>Panel A – CSR Assurance by a third party</b>				
CSR ASSUR NO	5,614	1,003	9,426	1,269
CSR ASSUR YES	631	713	1,559	1,194
Total	6,245	1,716	10,985	2,463
<b>Panel B – CSR Assurance by a Big 4 firm</b>				
CSR BIG 4 NO	5,981	1,336	10,327	1,703
CSR BIG 4 YES	264	380	658	760
Total	6,245	1,716	10,985	2,463

It is possible to identify that a higher percentage of companies in the treatment group assure their CSR information, both in the pre-adoption (42%) and post-adoption period (48%), when compared to the control group (10% and 14%, respectively). Furthermore, the companies that adopted Integrated Reporting presented an increase in preference for Big 4 firms as their assurance provider, going from 53% of the assured reports by Big 4 firms to 64% in the period post-adoption, while non-adopters had 42% in both periods.

Table 33. Frequency of Assurance – Sample IIRC

Description	(1)	(2)	(3)	(4)
	Pre-adoption		Post-adoption	
	Control	Treatment	Control	Treatment
	Freq	Freq	Freq	Freq
<b>Panel A – CSR Assurance by a third party</b>				
CSR ASSUR NO	1,962	348	3,262	307
CSR ASSUR YES	342	454	850	546
Total	2304	802	4112	853
<b>Panel B – CSR Assurance by a Big 4 firm</b>				
CSR BIG 4 NO	2,143	577	3,726	520
CSR BIG 4 YES	161	225	386	333
Total	2304	802	4112	853

Sample IIRC companies presented an even higher increase in percentage of CSR assurance, going from 57% of the reports in the pre-adoption period to 64% in the post-adoption period,

when compared to 15% and 21% in pre- and post-adoption periods for the non-adopters of Integrated Reporting. In the post-adoption period, Big 4 firms assure only 9% of the reports of the non-adopter firms, and 40% of the reports of the adopters.

In Appendix C, we presented the frequency of assurance of CSR information by country, and it was possible to assess that the U.S.A. has a low rate of assurance, which ratifies the findings of Simnett et al. (2009) and Casey and Grenier (2015).

The stock price reflects the expectation related to all available information about the company and, consequently, also the cost of debt. However, lenders are more focused in the company's capability to generate cash flow in order to pay the debt. So, the effects of sustainability initiatives that supposedly would improve the continuity of the company and decrease the information asymmetry are incorporated into the interest rate more slowly than into the cost of equity. According to the literature, lenders will require a higher level of credibility to react to this kind of initiative (Blackwell, Noland, & Winters, 1998).

Table 34. IR, cost of debt (interest rate and credit rating) and assurance

VARIABLES	(1) Ki Net 3	(2) Ki Net 4	(3) Rating 3	(4) Rating 4
IR	-0.0023 (0.0023)	-0.0028 (0.0036)	0.1878 (0.2136)	0.4155 (0.3726)
POST	-0.0046*** (0.0012)	-0.0053*** (0.0015)	0.1029 (0.1152)	0.0812 (0.1406)
<b>CSR ASSUR</b>	<b>-0.0019</b> <b>(0.0019)</b>	<b>-0.0021</b> <b>(0.0023)</b>	<b>0.3807***</b> <b>(0.1444)</b>	<b>0.3271</b> <b>(0.2382)</b>
IR * POST	0.0003 (0.0025)	0.0054 (0.0055)	0.0341 (0.2057)	-0.4071 (0.3574)
IR * CSR ASSUR		0.0012 (0.0041)		-0.2939 (0.4125)
POST * CSR ASSUR		0.0023 (0.0024)		0.0635 (0.2286)
<b>IR * POST * CSR ASSUR</b>		<b>-0.0087</b> <b>(0.0061)</b>		<b>0.5691</b> <b>(0.4349)</b>
LEV	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0090*** (0.0010)	-0.0090*** (0.0010)
ISIZE	-0.0035*** (0.0009)	-0.0035*** (0.0009)	0.6589*** (0.0730)	0.6617*** (0.0734)
ROA	0.0004** (0.0002)	0.0004** (0.0002)	0.1025*** (0.0149)	0.1020*** (0.0149)
MTB	0.0007 (0.0006)	0.0007 (0.0006)	0.2389*** (0.0445)	0.2380*** (0.0445)
<b>ESG Score</b>	<b>-0.0000</b> <b>(0.0001)</b>	<b>-0.0000</b> <b>(0.0001)</b>	<b>0.0131***</b> <b>(0.0046)</b>	<b>0.0131***</b> <b>(0.0046)</b>
ENFORC	-0.0128** (0.0055)	-0.0125** (0.0055)	0.4041 (0.5451)	0.3978 (0.5411)
TRUST	-0.0002 (0.0002)	-0.0002 (0.0002)	0.0079 (0.0159)	0.0083 (0.0159)
STAKELAW	0.0025*** (0.0009)	0.0024*** (0.0009)	-0.0622 (0.0688)	-0.0645 (0.0688)
Constant	0.1462***	0.1461***	1.0099	0.9670

VARIABLES	(1) Ki Net 3 (0.0271)	(2) Ki Net 4 (0.0270)	(3) Rating 3 (2.0960)	(4) Rating 4 (2.1135)
Observations	7,144	7,144	4,263	4,263
R-squared	0.1753	0.1763	0.4122	0.4127
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

We expect the cost of debt to be negatively related to Integrated Reporting disclosure for firms that assure their CSR information. However, we can see in Table 34 that the triple interaction IR \* POST \* CSR ASSUR is not significant.

Table 35. IR, cost of debt and assurance (Standard Errors not clustered at the firm level)

VARIABLES	(1) Ki Net 3	(2) Ki Net 4
IR	-0.0023 (0.0016)	-0.0028 (0.0026)
POST	-0.0046*** (0.0012)	-0.0053*** (0.0014)
CSR ASSUR	-0.0019 (0.0012)	-0.0021 (0.0019)
IR * POST	0.0003 (0.0019)	0.0054 (0.0036)
IR * CSR ASSUR		0.0012 (0.0031)
POST * CSR ASSUR		0.0023 (0.0022)
<b>IR * POST * CSR ASSUR</b>		<b>-0.0087** (0.0042)</b>
LEV	-0.0000*** (0.0000)	-0.0000*** (0.0000)
ISIZE	-0.0035*** (0.0005)	-0.0035*** (0.0005)
ROA	0.0004*** (0.0001)	0.0004*** (0.0001)
MTB	0.0007** (0.0003)	0.0007** (0.0003)
ESG Score	-0.0000 (0.0000)	-0.0000 (0.0000)
ENFORC	-0.0128** (0.0060)	-0.0125** (0.0060)
TRUST	-0.0002** (0.0001)	-0.0002** (0.0001)
STAKELAW	0.0025*** (0.0005)	0.0024*** (0.0005)
Constant	0.1462*** (0.0164)	0.1461*** (0.0164)
Observations	7,144	7,144
R-squared	0.1753	0.1763
Country FE	YES	YES
Industry FE	YES	YES

Note: Standard errors are robust, in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 35 shows the regression without clustering the standard errors, by firm, so it is possible to observe that the triple interaction IR \* POST \* CSR ASSUR is negative and significant at the 5% level. It is not enough evidence to state that the cost of debt is negatively related to Integrated Reporting disclosure when CSR is submitted to an assurance process, but it is a preliminary result that should be further investigated.

Table 36. IR, cost of debt (interest rate and credit rating) and Big4

VARIABLES	(1) Ki Net 3	(2) Ki Net 4	(3) Rating 3	(4) Rating 4
IR	-0.0025 (0.0023)	-0.0023 (0.0027)	0.2114 (0.2150)	0.2204 (0.2633)
POST	-0.0046*** (0.0012)	-0.0046*** (0.0013)	0.1200 (0.1153)	0.1362 (0.1207)
CSR BIG 4	-0.0005 (0.0020)	0.0019 (0.0032)	0.0856 (0.1659)	0.0229 (0.3378)
IR * POST	0.0003 (0.0025)	0.0022 (0.0035)	0.0272 (0.2057)	-0.1567 (0.2711)
IR * CSR BIG 4		-0.0019 (0.0043)		-0.0100 (0.4321)
POST * CSR BIG 4		-0.0005 (0.0032)		-0.0825 (0.3349)
<b>IR * POST * CSR BIG 4</b>		<b>-0.0036 (0.0051)</b>		<b>0.4253 (0.4641)</b>
LEV	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0090*** (0.0010)	-0.0090*** (0.0010)
ISIZE	-0.0036*** (0.0009)	-0.0036*** (0.0009)	0.6778*** (0.0742)	0.6783*** (0.0740)
ROA	0.0003** (0.0002)	0.0003** (0.0002)	0.1034*** (0.0149)	0.1035*** (0.0149)
MTB	0.0007 (0.0006)	0.0007 (0.0006)	0.2373*** (0.0445)	0.2355*** (0.0445)
ESG Score	-0.0000 (0.0001)	-0.0000 (0.0001)	0.0166*** (0.0044)	0.0170*** (0.0044)
ENFORC	-0.0127** (0.0055)	-0.0127** (0.0055)	0.3812 (0.5492)	0.3847 (0.5500)
TRUST	-0.0002 (0.0002)	-0.0002 (0.0002)	0.0037 (0.0157)	0.0035 (0.0158)
STAKELAW	0.0024*** (0.0009)	0.0024*** (0.0009)	-0.0368 (0.0695)	-0.0347 (0.0699)
Constant	0.1479*** (0.0272)	0.1479*** (0.0271)	0.6290 (2.1314)	0.5805 (2.1283)
Observations	7,144	7,144	4,263	4,263
R-squared	0.1750	0.1755	0.4103	0.4108
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 36 shows the test results for the relationship between cost of debt and Integrated Reporting with CSR information assured by a Big 4 audit firm. Note that the result of the triple interaction IR \* POST \* CSR BIG 4 is not significant, therefore, in our sample, the companies that adopt Integrated Reporting and assure CSR information in the period after the adoption do not present a difference in interest rate or credit rating, when compared to themselves pre-adoption, the non-assurance adopters and the control group.

Table 37. IR, cost of debt, institutional factors and Assurance (Triple Interaction) – Sample ALL

VARIABLES	(1) Ki Net HENF 2	(2) Ki Net LENF 4	(3) Ki Net HTRU 2	(4) Ki Net LTRU 4	(5) Ki Net HSKL 2	(6) Ki Net LSKL 4
IR	-0.0081** (0.0039)	0.0050 (0.0056)	-0.0010 (0.0047)	-0.0045 (0.0054)	-0.0057 (0.0043)	0.0014 (0.0056)
POST	-0.0068*** (0.0018)	-0.0021 (0.0020)	-0.0017 (0.0021)	-0.0069*** (0.0019)	-0.0023 (0.0026)	-0.0068*** (0.0017)
CSR ASSUR	-0.0027 (0.0030)	-0.0023 (0.0032)	-0.0034 (0.0030)	-0.0014 (0.0031)	0.0001 (0.0033)	-0.0037 (0.0032)
IR * POST	0.0129** (0.0064)	-0.0094 (0.0068)	0.0024 (0.0063)	0.0069 (0.0090)	0.0077 (0.0066)	0.0013 (0.0086)
IR * CSR ASSUR	0.0060 (0.0048)	-0.0048 (0.0060)	0.0042 (0.0057)	-0.0018 (0.0055)	0.0047 (0.0049)	-0.0027 (0.0063)
POST * CSR ASSUR	0.0035 (0.0034)	-0.0001 (0.0029)	0.0003 (0.0028)	0.0035 (0.0033)	-0.0021 (0.0035)	0.0056 (0.0036)
<b>IR * POST * CSR ASSUR</b>	<b>-0.0180** (0.0076)</b>	<b>0.0071 (0.0072)</b>	<b>-0.0083 (0.0069)</b>	<b>-0.0080 (0.0095)</b>	<b>-0.0091 (0.0072)</b>	<b>-0.0077 (0.0096)</b>
LEV	-0.0001*** (0.0000)	-0.0000*** (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0044*** (0.0013)	-0.0012 (0.0009)	-0.0051*** (0.0011)	-0.0026** (0.0013)	-0.0035*** (0.0011)	-0.0036** (0.0015)
ROA	0.0003* (0.0002)	0.0003* (0.0002)	0.0004** (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0004** (0.0002)
MTB	0.0009 (0.0007)	0.0002 (0.0008)	0.0002 (0.0011)	0.0008 (0.0007)	0.0007 (0.0009)	0.0006 (0.0008)
ESG Score	-0.0000 (0.0001)	0.0001 (0.0001)	0.0001* (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)
ENFORC	-0.0094 (0.0082)	-0.0141 (0.0087)	-0.0174** (0.0077)	-0.0105 (0.0085)	-0.0121* (0.0067)	-0.0154* (0.0088)
Constant	0.1808*** (0.0306)	0.0764*** (0.0239)	0.1939*** (0.0296)	0.1551*** (0.0394)	0.1620*** (0.0254)	0.1582*** (0.0321)
Observations	5,015	2,520	2,686	4,477	3,143	4,001
R-squared	0.1292	0.3242	0.2639	0.1269	0.1704	0.1947
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 37 shows the test results for the subsamples by institutional factor, which tells us that companies that disclose Integrated Reporting, assure their CSR information and maintain their

headquarters in a high enforcement environment achieve a lower cost of debt in the period after the disclosure. This corroborates the argumentation and results of studies by Ball (2001), Perego and Kolk (2012) and Simnett et al. (2009), which stated that the lower cost of debt can be related to regulatory pressure and coercive mechanisms that are in place in high enforcement environments, increasing the credibility of disclosure and of the assurance process, and resulting in a lower cost of debt.

A lower interest rate was observed to be associated with Integrated Reporting disclosures only in a setting of High Enforcement environments and assured reports, a fact that can indicate that lenders perceive less default risk for companies that disclose financial and non-financial information and assure their CSR information.

The other institutional factors' subsamples – trust and stakeholder orientation – tested the triple interaction IR \* POST \* CSR ASSUR and found that it was not statistically significant, as can be observed in Table 37, Models 3 to 6. These results corroborate a study by Bae and Goyal (2009) that showed that enforcement is a stronger factor to explain loan contract characteristics than other factors, such as creditors rights. Additionally, Liang and Renneboog (2017) presented evidence that enforcement was the strongest institutional variable to explain the non-financial performance, resulting from non-financial disclosure, and a consequent reduction of information asymmetry and decrease in the perception of risk.

Table 38. IR, cost of debt, institutional factors and Assurance Big 4 (Triple Interaction) – Sample ALL

VARIABLES	(1) Ki Net HENF 2	(2) Ki Net LENF 4	(3) Ki Net HTRU 2	(4) Ki Net LTRU 4	(5) Ki Net HSKL 2	(6) Ki Net LSKL 4
IR	-0.0077** (0.0033)	0.0043 (0.0035)	0.0005 (0.0034)	-0.0047 (0.0041)	-0.0056 (0.0036)	0.0009 (0.0038)
POST	-0.0063*** (0.0016)	-0.0016 (0.0017)	-0.0015 (0.0018)	-0.0060*** (0.0018)	-0.0032 (0.0022)	-0.0054*** (0.0016)
CSR BIG 4	-0.0004 (0.0044)	0.0047 (0.0044)	0.0026 (0.0040)	-0.0003 (0.0044)	0.0027 (0.0033)	0.0049 (0.0078)
IR * POST	0.0078* (0.0045)	-0.0055 (0.0043)	-0.0005 (0.0043)	0.0036 (0.0055)	0.0057 (0.0045)	-0.0009 (0.0051)
IR * CSR BIG 4	0.0069 (0.0058)	-0.0102** (0.0050)	0.0006 (0.0067)	-0.0037 (0.0056)	0.0061 (0.0049)	-0.0145 (0.0089)
POST * CSR BIG 4	0.0021 (0.0047)	-0.0039 (0.0044)	-0.0024 (0.0043)	0.0014 (0.0042)	-0.0003 (0.0037)	-0.0039 (0.0076)
<b>IR * POST * CSR BIG 4</b>	<b>-0.0128*</b> <b>(0.0071)</b>	<b>0.0058</b> <b>(0.0060)</b>	<b>-0.0036</b> <b>(0.0069)</b>	<b>-0.0032</b> <b>(0.0070)</b>	<b>-0.0094</b> <b>(0.0060)</b>	<b>0.0037</b> <b>(0.0096)</b>
LEV	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0045*** (0.0013)	-0.0012 (0.0009)	-0.0054*** (0.0011)	-0.0025* (0.0013)	-0.0037*** (0.0011)	-0.0034** (0.0014)
ROA	0.0003* (0.0002)	0.0003 (0.0002)	0.0004** (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0004** (0.0002)

VARIABLES	(1) Ki Net HENF 2	(2) Ki Net LENF 4	(3) Ki Net HTRU 2	(4) Ki Net LTRU 4	(5) Ki Net HSKL 2	(6) Ki Net LSKL 4
MTB	0.0009 (0.0007)	0.0002 (0.0008)	0.0002 (0.0011)	0.0008 (0.0007)	0.0007 (0.0009)	0.0007 (0.0008)
ESG Score	-0.0000 (0.0001)	0.0000 (0.0001)	0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0000 (0.0001)
ENFORC	-0.0097 (0.0083)	-0.0145* (0.0087)	-0.0182** (0.0077)	-0.0106 (0.0085)	-0.0117* (0.0067)	-0.0145* (0.0087)
Constant	0.1850*** (0.0313)	0.0796*** (0.0236)	0.2014*** (0.0300)	0.1530*** (0.0394)	0.1681*** (0.0257)	0.1540*** (0.0317)
Observations	5,015	2,520	2,686	4,477	3,143	4,001
R-squared	0.1273	0.3244	0.2623	0.1263	0.1706	0.1946
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Models 1 and 2, in Table 38, provide evidence that companies that disclose Integrated Reporting and choose a Big 4 audit firm to assure CSR information attain a lower cost of debt in the period after the disclosure, but only if they are in a high enforcement environment. The triple interaction of IR \* POST \* CSR BIG 4 for Model 1, however, is just marginally significant (-0.0128 significant at a 10% level), when considering a sample of 5,015 firm-year observations, with an R-squared of 0.1273. For Model 2, which considers firms in a low enforcement environment, the triple interaction of IR \* POST \* CSR BIG 4 is not significant. Models 3 to 6, in Table 38, present the test results related to the subsamples of high and low trust and stakeholder orientation environments, the results remain the same as for the analysis of conducting an assurance process, with the triple interaction IR \* POST \* CSR BIG 4 not being statistically significant. This means that companies that disclose integrated information and choose a Big 4 audit firm to assure CSR information do not have a difference in the cost of debt that is statistically significant, as compared to their own pre-adoption period, and to companies that do not choose a Big 4 audit firm as an assurance provider and do not disclose Integrated Reporting.

Table 39. IR, cost of debt (credit rating), Institutional factors and Assurance (Triple Interaction)– Sample ALL

VARIABLES	(1) Rating HENF 2	(2) Rating LENF 4	(3) Rating HTRU 2	(4) Rating LTRU 4	(5) Rating HSKL 2	(6) Rating LSKL 4
IR	0.2902 (0.4617)	0.1682 (0.4730)	0.2071 (0.3307)	0.5979 (0.6569)	0.9994 (0.7109)	0.0909 (0.4385)
POST	0.4195*** (0.1405)	-0.4580 (0.3062)	0.0888 (0.2345)	0.1405 (0.1658)	0.2832 (0.3242)	0.0048 (0.1540)
CSR ASSUR	0.6067** (0.2835)	-0.4008 (0.3825)	0.6281* (0.3353)	0.2097 (0.3095)	0.6602 (0.4337)	0.2404 (0.2896)

VARIABLES	(1) Rating HENF 2	(2) Rating LENF 4	(3) Rating HTRU 2	(4) Rating LTRU 4	(5) Rating HSKL 2	(6) Rating LSKL 4
IR * POST	-0.1622 (0.4191)	0.0164 (0.5209)	-0.0837 (0.3991)	-0.6180 (0.6113)	-0.8965 (0.7567)	-0.2799 (0.3802)
IR * CSR ASSUR	-0.3888 (0.5135)	0.4065 (0.5403)	-0.6005 (0.4047)	-0.1300 (0.7005)	-0.8984 (0.7539)	-0.0454 (0.5010)
POST * CSR ASSUR	-0.3410 (0.2700)	0.8391** (0.4051)	-0.5167 (0.3375)	0.3783 (0.2937)	-0.2593 (0.4043)	0.2145 (0.2907)
<b>IR * POST * CSR ASSUR</b>	<b>0.4390</b> <b>(0.5116)</b>	<b>-0.1493</b> <b>(0.6252)</b>	<b>0.4625</b> <b>(0.5023)</b>	<b>0.6997</b> <b>(0.7033)</b>	<b>1.2509</b> <b>(0.8313)</b>	<b>0.1739</b> <b>(0.5364)</b>
LEV	-0.0104*** (0.0011)	-0.0055*** (0.0019)	-0.0126*** (0.0016)	-0.0083*** (0.0012)	-0.0086*** (0.0019)	-0.0091*** (0.0012)
ISIZE	0.8773*** (0.0850)	0.3159** (0.1247)	1.0377*** (0.1184)	0.5464*** (0.0901)	0.7537*** (0.0973)	0.5862*** (0.1052)
ROA	0.1032*** (0.0164)	0.1033*** (0.0298)	0.0670*** (0.0228)	0.1170*** (0.0177)	0.1045*** (0.0262)	0.0953*** (0.0177)
MTB	0.2469*** (0.0479)	0.1295 (0.1043)	0.2367*** (0.0752)	0.2166*** (0.0484)	0.2963*** (0.0873)	0.2255*** (0.0494)
<b>ESG Score</b>	<b>0.0147***</b> <b>(0.0054)</b>	<b>0.0054</b> <b>(0.0083)</b>	<b>-0.0127*</b> <b>(0.0067)</b>	<b>0.0236***</b> <b>(0.0059)</b>	<b>0.0035</b> <b>(0.0083)</b>	<b>0.0178***</b> <b>(0.0054)</b>
ENFORC	1.4200** (0.6934)	0.1965 (1.0682)	-0.4936 (0.5041)	1.9041** (0.9260)	0.9801 (0.9171)	-0.0514 (0.6606)
Constant	-6.5298*** (2.2449)	11.7821*** (3.0375)	-4.3581* (2.6244)	0.4592 (2.8013)	-2.3950 (2.6583)	4.5810* (2.5257)
Observations	2,765	1,752	1,507	2,769	1,607	2,656
R-squared	0.4530	0.3222	0.5590	0.3349	0.4238	0.4200
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

We analyzed the relationship between credit rating and Integrated Reporting disclosure for companies that assure CSR information, considering subsamples by institutional factors (enforcement, trust and Stakeholder Orientation). Table 39 shows that this relation is not statistically significant for any of the subsamples, and the triple interaction IR \* POST \* CSR ASSUR is not significant in any of the models. This is in line with the results attained by La Rosa et al. (2018), which found that while interest rate is related to enforcement, credit rate is not.

Table 40. IR, cost of debt (credit rating), Institutional factors and Assurance Big 4 (Triple Interaction) – Sample ALL

VARIABLES	(1) Rating HENF 2	(2) Rating LENF 4	(3) Rating HTRU 2	(4) Rating LTRU 4	(5) Rating HSKL 2	(6) Rating LSKL 4
IR	-0.0313 (0.3523)	0.3437 (0.3350)	-0.0924 (0.2443)	0.4545 (0.5131)	0.4076 (0.5223)	0.1432 (0.3017)
POST	0.3987*** (0.1274)	-0.1214 (0.2392)	-0.0564 (0.1840)	0.2703* (0.1471)	0.2986 (0.2723)	0.0706 (0.1332)

VARIABLES	(1) Rating HENF 2	(2) Rating LENF 4	(3) Rating HTRU 2	(4) Rating LTRU 4	(5) Rating HSKL 2	(6) Rating LSKL 4
CSR BIG 4	0.4347 (0.4360)	-0.6192 (0.4736)	0.0667 (0.6503)	0.1012 (0.4033)	0.3074 (0.4000)	-0.0211 (0.7420)
IR * POST	0.1408 (0.3155)	-0.1471 (0.3859)	0.0508 (0.2822)	-0.2408 (0.4898)	-0.2397 (0.5262)	-0.2556 (0.3022)
IR * CSR BIG 4	0.1331 (0.5685)	0.1980 (0.5688)	0.0095 (0.7185)	-0.0628 (0.6453)	-0.1159 (0.6247)	-0.4436 (0.8407)
POST * CSR BIG 4	-0.4979 (0.4167)	0.4200 (0.5116)	-0.2717 (0.6428)	0.0414 (0.3962)	-0.3138 (0.4028)	0.0818 (0.7735)
<b>IR * POST * CSR BIG 4</b>	<b>0.0607</b> <b>(0.5546)</b>	<b>0.3872</b> <b>(0.6767)</b>	<b>0.1939</b> <b>(0.7272)</b>	<b>0.5855</b> <b>(0.6766)</b>	<b>0.5263</b> <b>(0.6561)</b>	<b>0.5769</b> <b>(0.9370)</b>
LEV	-0.0105*** (0.0011)	-0.0056*** (0.0019)	-0.0125*** (0.0016)	-0.0083*** (0.0012)	-0.0084*** (0.0019)	-0.0092*** (0.0012)
ISIZE	0.8951*** (0.0875)	0.3334*** (0.1251)	1.0381*** (0.1193)	0.5621*** (0.0901)	0.7601*** (0.0991)	0.6155*** (0.1051)
ROA	0.1041*** (0.0164)	0.1040*** (0.0295)	0.0682*** (0.0229)	0.1185*** (0.0178)	0.1068*** (0.0266)	0.0965*** (0.0176)
MTB	0.2469*** (0.0480)	0.1323 (0.1051)	0.2331*** (0.0756)	0.2172*** (0.0485)	0.2957*** (0.0868)	0.2263*** (0.0493)
<b>ESG Score</b>	<b>0.0176***</b> <b>(0.0052)</b>	<b>0.0090</b> <b>(0.0079)</b>	<b>-0.0091</b> <b>(0.0063)</b>	<b>0.0285***</b> <b>(0.0058)</b>	<b>0.0084</b> <b>(0.0077)</b>	<b>0.0211***</b> <b>(0.0053)</b>
ENFORC	1.3601* (0.7062)	0.3611 (1.1055)	-0.5063 (0.5033)	1.8004* (0.9393)	0.8175 (0.9469)	0.0368 (0.6509)
Constant	-6.8501*** (2.2942)	11.0143*** (3.0897)	-4.3281* (2.6189)	0.3498 (2.8529)	-2.3307 (2.6924)	3.9521 (2.5446)
Observations	2,765	1,752	1,507	2,769	1,607	2,656
R-squared	0.4523	0.3209	0.5575	0.3312	0.4212	0.4180
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 40 shows the results of how choosing a Big 4 audit firm as an assurance provider is related to the relationship between Integrated Reporting disclosures and credit rating, when considering subsamples by high and low enforcement, trust and stakeholder orientation. The triple interaction IR \* POST \* CSR BIG 4 is not significant, which is in line with the results from Table 39.

## 5. FINAL REMARKS

Integrated Reporting is a process that provides integrated financial and non-financial information about companies. In essence, this report includes medium and long-term perspectives, based on the integrated thinking concept. Such information should be considered in the decision-making process and, consequently, in the company's disclosure practices (Barth et al., 2017; Bernardi & Stark, 2018; IIRC, 2013).

One of the main purposes of Integrated Reporting is to provide information to financial capital providers, leading to a more efficient allocation of capital, by virtue of a better understanding of the companies' perspectives through time (IIRC, 2013). Thus, companies that adopt Integrated Reporting disclosure potentially observe a decrease in information asymmetry, thereby, improving their multiple capitals management systems. These factors can result in economic benefits for the companies. This research analyzes the relationship between Integrated Reporting disclosure, and cost of equity and cost of debt.

We analyzed a global sample of 25,311 firm-year observations, from 2010 to 2017. Sample ALL included 4,876 firm-year observations of Integrated Reporting disclosers, and 20,435 firm-year observations of the control group. The treatment group was composed of companies that disclosed their reports to the IIRC's Integrated Reporting Examples Database, and companies that self-declared Integrated Reporting disclosures to the GRI Sustainability Database. The control group was defined by a matching procedure called Propensity Score Matching – PSM – which included companies that published Integrate Reporting and similar companies that did not disclose using <IR>. The nearest neighbor criterion, with replacement, and the variables sector and size were used for the PSM procedure.

We adopted a research design based on differences-in-differences, which allows for a comparison of the group of companies that disclose Integrated Reporting in the period before and after the adoption, thus, keeping individual variations constant. In addition, we compared the treatment group to a control group in the period before and after the treatment, allowing for control over other environmental variations that may affect the cost of capital.

From the literature review, we hypothesized (H1) that Integrated Reporting disclosures and cost of equity are negatively related. Our results support this hypothesis and are robust when considering firm-level and country-level controls. The evidence presented in this research differs from the results of a study by Barth et al. (2017) which found no evidence of relationship between Integrated Reporting and cost of equity. It does, however, corroborate the findings of García-Sánchez and Noguera-Gámez (2017) and Zhou et al. (2017).

We further investigated these results and found evidence that enforcement is an institutional factor that plays an important role in the relationship between Integrated Reporting disclosure and cost of equity. After analyzing a subsample of high and low enforcement environments, only companies in high enforcement environments showed a lower cost of equity after the adoption of Integrated Reporting, results which are in line with the findings of Chih et al. (2010) Dhaliwal et al. (2012) and Frías-Aceituno et al. (2013).

We investigate the effect of Societal Trust in the relationship of Integrated Reporting and cost of debt, the results indicate that cost of equity is lower for companies that adopted Integrated Reporting in environments with higher societal trust. The magnitude of the difference, however, is low, so it may not be economically significant. Even though we found initial evidence that corroborate with Nanda and Wysocki (2011), that users in a higher societal trust environment perceive the information as more credible and increase the demand for information.

When considering Stakeholder Orientated countries, results showed that companies with Low Stakeholder Orientation had a more significant reduction in the cost of capital when Integrated Reporting was adopted. Two possible explanations were identified: companies in Stakeholder Orientated countries had a superior quality of financial and non-financial information in the period prior to adoption (Dhaliwal et al., 2014), so that users did not perceive such an expressive information increment; or, alternatively, Integrated Reporting is a type of communication focused on the informational needs of capital providers, which is more valued in Shareholder Oriented countries. This may indicate that the investors in a Shareholder Oriented environment tend to value more the non-financial information when it is interconnected to the financial information and identified within the organization's business model.

Our evidence showed that debtholders respond differently to the Integrated Reporting disclosure than equity holders. Despite the difference in cost of equity for companies adopting Integrated Reporting, we find limited evidence of a relationship between cost of debt and Integrated Reporting disclosure, even when analyzing subsamples by institutional factors. Further investigations were conducted related to the effect of assurance in the <IR>/cost of debt relationship, finding that companies that disclose Integrated Reporting in a High Enforcement environment and assure their CSR information showed a lower cost of debt in the period after the adoption.

## Limitations of the Research

The first limitation we encountered was the metrics used to proxy the Integrated Reporting Disclosure. Therefore, based on information from the Integrated Reporting Examples Database and the GRI Sustainability Database, we used a dummy variable to indicate whether or not the company adopted Integrated Reporting. The information did not discriminate the degree of the disclosures' compliance with the framework neither did it control which companies actually applied the Integrated Thinking concept.

However, our proxy did capture which companies self-declared an adoption to Integrated Reporting, which meant that the company was making an effort to engage the Integrated Reporting framework and to ingrain the integrated thinking concept into their corporate culture. This allowed us to analyze a large cross-country sample and investigate the effects of institutional factors in that relationship.

The literature did not reach a consensus about which would be the best proxy for cost of equity and, although it did present several other forms of estimation, e.g. Gebhardt, Lee and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005) and Easton (2004), we finally estimated cost of equity using the CAPM, which is the most popular model, especially among executives. Nonetheless, we encourage further investigation using other metrics to analyze the robustness of the results.

The cost of debt was proxied by two measurements, an accounting measure – the interest rate – and a market measure – the credit rating. This was done with the intention of minimizing any potential problems with the measurement of the construct. However, there are other factors that influence credit agreements that were not being controlled, for example, any guarantees offered in the contract.

Furthermore, there were several observations that had missing data, specifically regarding the variable ESG Score. In spite of that, we analyzed the results by including the variables one at a time, thus, making it possible to examine the consistency of the results. This helped to ensure that the missing data was not the result of bias which could cause spurious results.

The period for the analysis was set to between 2010 and 2017. The year 2010 was selected because it was the first year for which the GRI Sustainability Database reported information about companies that disclosed using Integrated Reporting. The period ends in 2017 because that was the last year for which the information was available to be retrieved.

Additionally, all proxies used in the model were approximations that allowed us to measure the theoretical constructs. Selection of these proxies, including controls, turned out to be one

of the main limitations of this research. Since the variables could not adequately represent the construct being studied nor did we have other proxies to measure it more adequately, we chose proxy variables according to the reviewed literature so as to minimize measurement errors.

### **Extension and Suggestions for Future Research**

Future research should develop a measure of quality for Integrated Reporting to evaluate, among other things: the connectivity between the information presented; materiality; and long-term orientation information. A critical gap in the Integrated Reporting literature now available relates specially to the evaluation of the connectivity and interdependence of capitals.

Our study focused on the relationship between Integrated Reporting disclosure and economic benefits. As the integrated report is a broad proposal, suggesting changes not only in the actual reports, but also in many of the company's characteristics, it would be interesting to investigate how much economic benefit is related to each factor, and what are the benefits related to strategic changes, changes in the decision making process, changes in the company's performance and, finally, changes in the presentation format. To isolate the effects, it would probably be interesting to formulate experiments, although archival approaches that can help to understand this relationship could also be considered.

Greater scrutiny of creditors' reaction to Integrated Reporting would also be one of our suggestions. Future research could examine whether other characteristics of the loan agreements change after the adoption of Integrated Reporting, characteristics such as collateral, covenants and loan repayment terms. With respect to the cost of equity, since CAPM – Capital Asset Pricing Model – was used in this study, we suggest that future research efforts use other measures – e.g. Gebhardt, Lee and Swaminathan (2001), Claus and Thomas (2001), Ohlson and Juettner-Nauroth (2005) and Easton (2004) – to verify the consistency of the findings.

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## APPENDIX A: SCATTERPLOT BEFORE AND AFTER WINSORIZING FINANCIAL VARIABLES

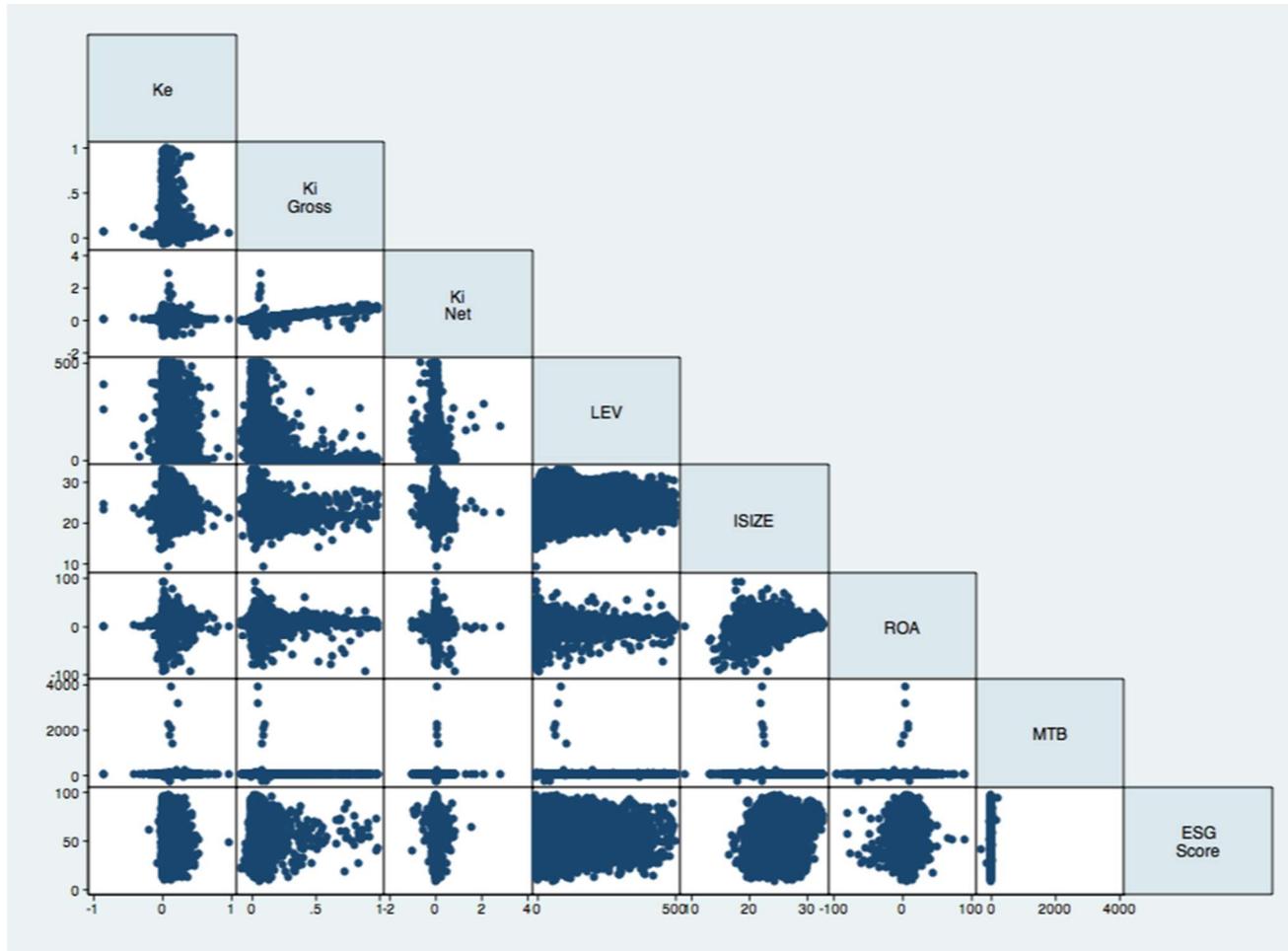


Figure 3. Scatterplot before winsorizing financial variables – Sample ALL

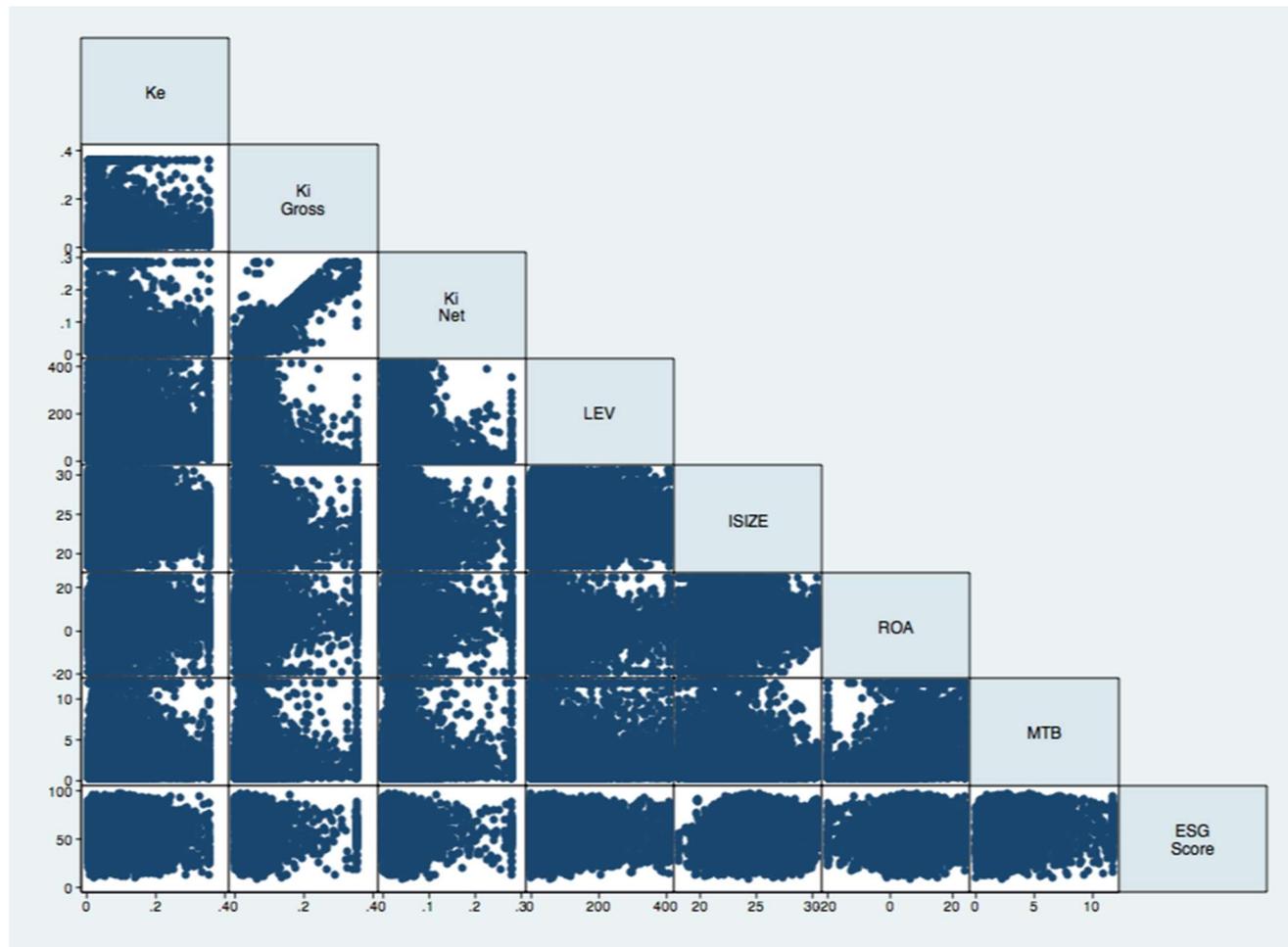


Figure 4. Scatterplot after wisorizing financial variables – Sample ALL

## APPENDIX B: GRAPH TO INFER PARALLELISM

Testing for parallelism of treatment and control groups yielded the following line graph for the cost of equity measured according to CAPM.

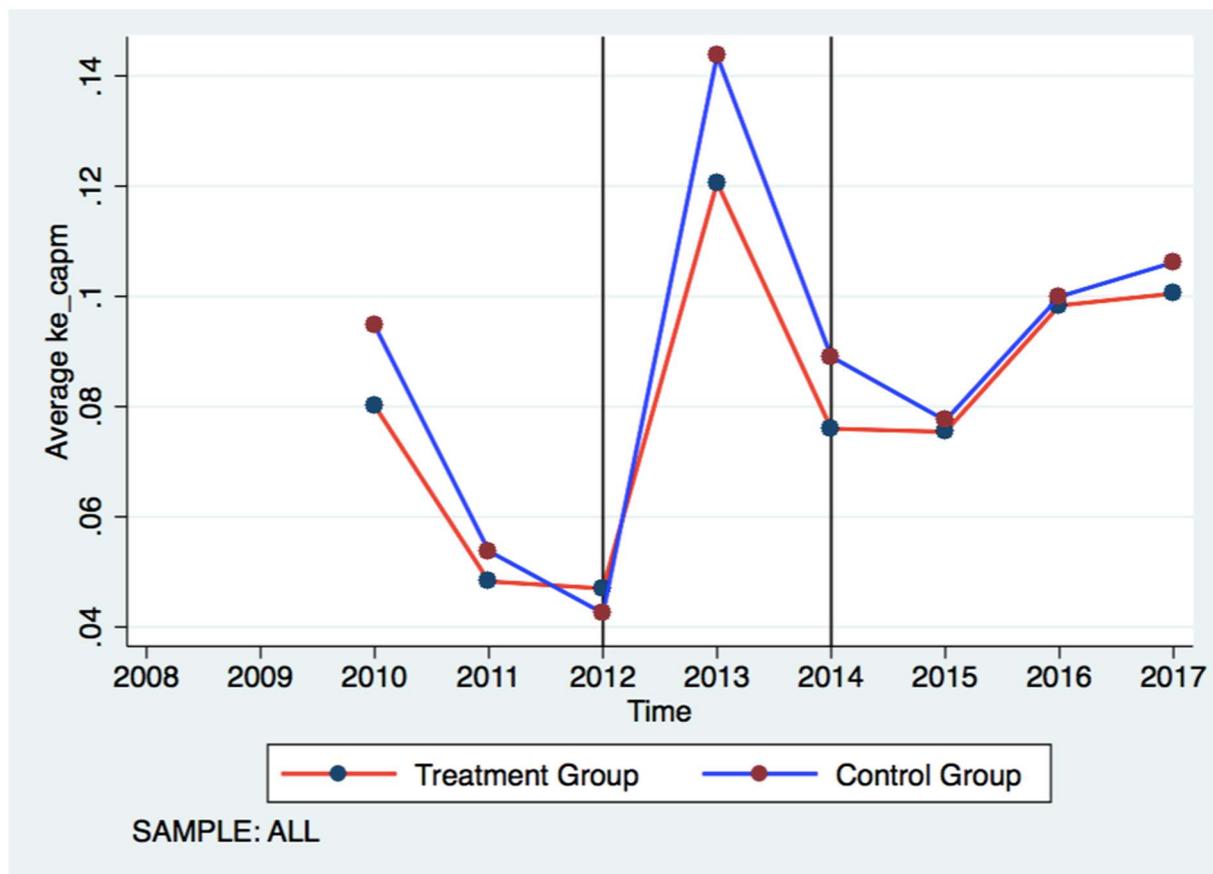


Figure 5. Results of the parallelism test for cost of equity in the control and treatment groups – Sample ALL.

From the line graph, one can infer parallelism for the period before 2011, however, since the adoption of Integrated Reporting occurred in different periods for different companies, it is difficult to have a clear view of the effects.

Testing for parallelism of treatment and control groups yielded the following line graph for the cost of debt, as represented by the net interest rate spread attained from taxes.

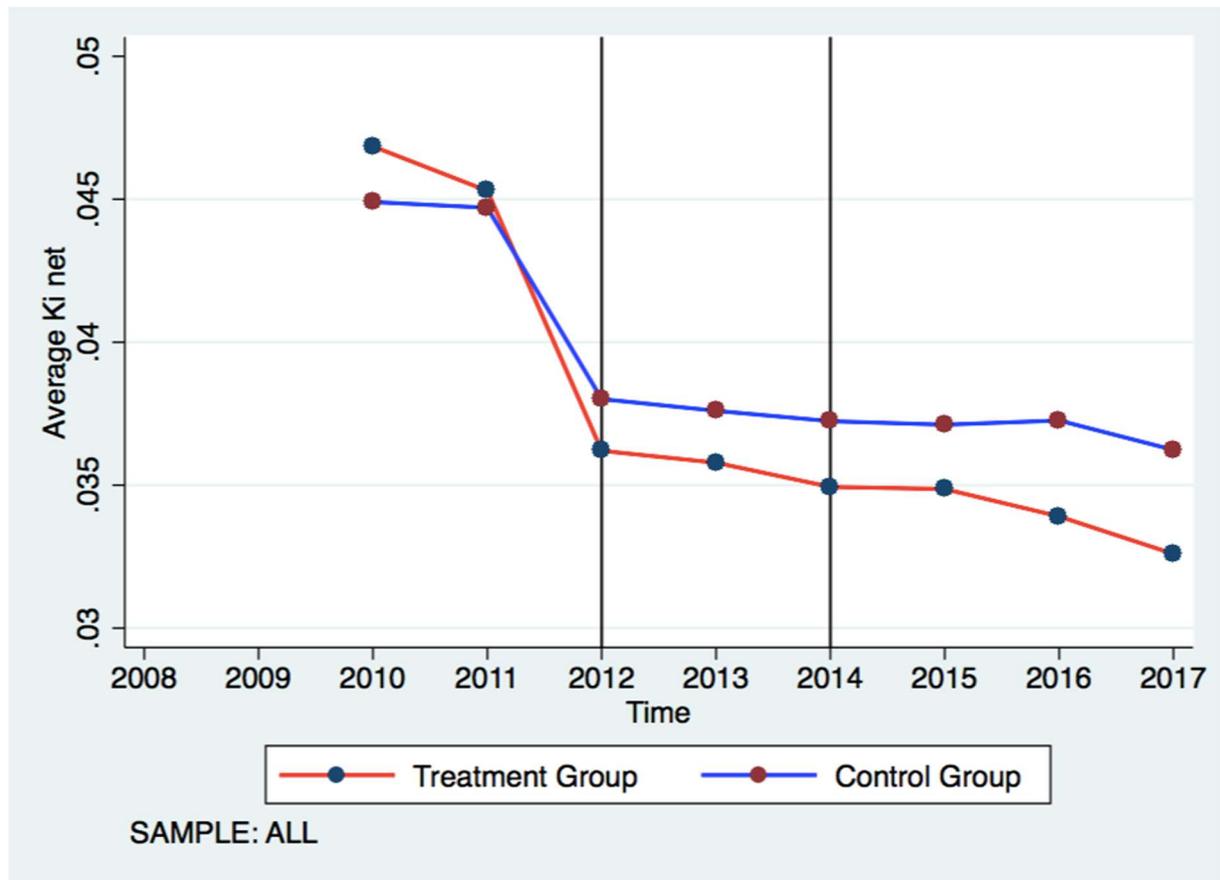


Figure 6. Results of the parallelism test for cost of debt in the control and treatment groups – Sample ALL.

Since the adoption of Integrated Reporting did not occur in a specific moment in time, it was not possible to infer its effects Integrated Reporting on the cost of equity and cost of debt with just the above line graph. But it's possible to see that cost of debt was higher before the for companies adopted Integrated Reporting, in 2010, and that, post-adoption, it became lower than the non-adopters group.

## APPENDIX C: DESCRIPTIVE STATISTICS

Table 41. Sample ALL - Descriptive statistics across pre- and post-adoption periods by adopters (treatment) and non-adopters (control).

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	N	Control Pre-adoption		MIN	MAX	N	Control Post-adoption		MIN	MAX
		MEAN	SD				MEAN	SD		
Ke	5,803	0.0632	0.0739	0.00802	0.356	10,637	0.103	0.0733	0.00802	0.356
Ki Gross	5,535	0.0564	0.0512	0.00243	0.354	10,091	0.0491	0.0478	0.00243	0.354
Ki Net	5,557	0.0425	0.0414	0.00130	0.281	10,066	0.0371	0.0388	0.00130	0.281
LEV	6,245	83.80	86.09	0	408.7	10,985	87.48	86.35	0	408.7
ISIZE	6,245	23.34	2.539	18.17	30.47	10,985	23.59	2.488	18.17	30.47
ROA	6,245	4.596	6.323	-19.47	24.21	10,985	3.758	6.014	-19.47	24.21
MTB	5,930	1.780	1.772	0.131	11.83	10,681	2.000	1.966	0.131	11.83
ESG Score	1,845	52.00	18.52	7.990	94.20	4,147	53.03	17.71	9.662	93.93
ENFORC	6,245	1.149	0.751	-1.780	1.969	10,985	1.201	0.769	-1.579	2.100
TRUST	5,754	70.27	21.51	17.50	134.5	10,062	70.46	22.27	17.50	134.5
STAKELAW	5,740	13.04	4.989	3.130	26.88	10,036	13.09	5.078	3.130	26.88
Rating	2,001	18.80	3.582	3	27	4,111	19.00	3.788	3	27

(continues)

Table 41. Sample ALL - Descriptive statistics across pre- and post-adoption periods by adopters (treatment) and non-adopters (control).

VARIABLES	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	N	Treatment Pre-adoption MEAN	SD	MIN	MAX	N	Treatment Post-adoption MEAN	SD	MIN	MAX
Ke	1,624	0.0713	0.0697	0.00802	0.356	2,399	0.0875	0.0621	0.00802	0.356
Ki Gross	1,538	0.0539	0.0518	0.00243	0.354	2,283	0.0486	0.0445	0.00243	0.354
Ki Net	1,539	0.0396	0.0413	0.00130	0.281	2,237	0.0360	0.0350	0.00130	0.281
LEV	1,716	80.62	76.94	0	408.7	2,463	83.59	77.01	0	408.7
ISIZE	1,716	24.37	2.895	18.17	30.47	2,463	24.05	2.754	18.17	30.47
ROA	1,716	4.781	5.594	-19.47	24.21	2,463	4.358	6.134	-19.47	24.21
MTB	1,660	1.953	1.718	0.131	11.83	2,423	2.232	2.046	0.131	11.83
ESG Score	892	64.29	14.86	19.26	95.68	1,427	66.74	13.74	17.67	95.67
ENFORC	1,716	1.165	0.810	-1.823	2.100	2,463	1.182	0.833	-1.579	2.100
TRUST	1,592	70.16	27.99	17.50	134.5	2,322	69.02	30.63	17.50	134.5
STAKELAW	1,552	15.55	5.155	3.130	26.88	2,269	15.43	5.159	3.130	26.88
Rating	875	20.45	2.925	7	27	1,250	20.11	3.165	7	27

Note: Ke CAPM: Cost of equity measured by CAPM; Ki Net Ki: Cost of debt; ratio between interest paid and the average debt in the past 5 years, net of taxes; Rating: Standard & Poor's Rating using a numerical correspondence. Lev: Leverage; level of indebtedness for the company; ISize: Size; measured by the natural logarithm of total assets. MTB: Market-to-Book ratio (market value/book value); represents the tangibility of the company. ROA: Return on Assets; represents the profitability level of the company; ESG Score: Environmental, Social and Governance Score; measured by the Integrated Reporting quality and the CSR performance. Enforc: Enforcement measure; represents the legal enforcement systems strength proxied by the "Rule of law index". Trust: Trust measure; overall perception of the trust level of citizens in a country, measured by World Values Survey. Stakelaw: Stakeholder Orientation measure; legitimation of multiple stakeholders to demand actions and information from the companies, proxied by the legal environment to protect employees' rights.

## APPENDIX D: FREQUENCY OF ASSURANCE BY COUNTRY

Table 42. Frequency of assurance by country for Sample ALL

Country	Control		Treatment		Control		Treatment	
	CSR	CSR	CSR	CSR	CSR	CSR	CSR	CSR
	ASSUR	ASSUR	ASSUR	ASSUR	BIG 4	BIG 4	BIG 4	BIG 4
	NO	YES	NO	YES	NO	YES	NO	YES
	Freq	Freq	Freq	Freq	Freq	Freq	Freq	Freq
Australia	350	91	85	77	375	66	105	57
Austria	89	23	32	8	96	16	33	7
Belgium	110	1	34	43	110	1	38	39
<b>Brazil</b>	<b>399</b>	<b>66</b>	<b>189</b>	<b>106</b>	<b>415</b>	<b>50</b>	<b>236</b>	<b>59</b>
Canada	598	70	53	34	627	41	58	29
Chile	202	26	60	4	204	24	63	1
China	749	14	19	3	757	6	19	3
Colombia	31	1	35	37	32		48	24
Denmark	57	19		40	62	14	2	38
Finland	63	42	58	86	79	26	80	64
France	346	240	25	98	400	186	44	79
Germany	366	97	57	105	376	87	77	85
Greece	122	17	4	8	131	8	12	
Hong Kong	993	61	25	29	1,042	12	42	12
India	895	86	41	23	930	51	59	5
Italy	211	41	8	65	223	29	16	57
<b>Japan</b>	<b>2,592</b>	<b>404</b>	<b>458</b>	<b>351</b>	<b>2,930</b>	<b>66</b>	<b>703</b>	<b>106</b>
Korea; Republic	702	154	26	70	837	19	78	18
Luxembourg	40	6	10	22	44	2	12	20
Malaysia	297	17	15	11	305	9	24	2
Mexico	112	18	136	27	118	12	143	20
Netherlands	91	25	80	71	98	18	86	65
New Zealand	86	4	58	14	86	4	62	10
Oman	11		8		11		8	
Philippines	220	8	32	32	228		64	
Poland	117	10	56	15	117	10	61	10
Russia	370	48	53	24	409	9	64	13
Singapore	281	13	37	24	292	2	50	11
Spain	131	29	76	107	136	24	96	87
Sri Lanka	49		54	1	49		55	
Sweden	203	34	75	76	212	25	79	72
Switzerland	222	46	93	57	246	22	128	22
<b>United Kingdom</b>	<b>547</b>	<b>169</b>	<b>192</b>	<b>189</b>	<b>659</b>	<b>57</b>	<b>259</b>	<b>122</b>
<b>USA</b>	<b>3,380</b>	<b>310</b>	<b>67</b>	<b>50</b>	<b>3,664</b>	<b>26</b>	<b>114</b>	<b>3</b>
Zimbabwe	8		21		8		21	
Total	15040	2190	2272	1907	16308	922	3039	1140

## APPENDIX E: RESULTS FOR SAMPLE IIRC – COST OF EQUITY

Table 43. IR, cost of equity and Enforcement – Sample IIRC (H3a)

VARIABLES	(1) Ke CAPM ENF2	(2) Ke CAPM ENF2	(3) Ke CAPM ENF2	(4) Ke CAPM ENF2
IR	0.0004 (0.0097)	0.0001 (0.0096)	0.0135 (0.0127)	-0.0011 (0.0133)
POST	-0.0013 (0.0043)	-0.0015 (0.0044)	-0.0003 (0.0079)	-0.0066 (0.0101)
IR * POST	-0.0055 (0.0110)	-0.0067 (0.0110)	-0.0224 (0.0143)	-0.0083 (0.0157)
ENFORC	-0.0859*** (0.0135)	-0.0853*** (0.0135)	-0.0790*** (0.0190)	-0.0891*** (0.0205)
IR * ENFORC	0.0143** (0.0066)	0.0146** (0.0065)	0.0106 (0.0083)	0.0203** (0.0086)
POST * ENFORC	0.0442*** (0.0030)	0.0437*** (0.0030)	0.0440*** (0.0051)	0.0482*** (0.0064)
<b>IR * POST * ENFORC</b>	<b>-0.0129*</b> <b>(0.0073)</b>	<b>-0.0118</b> <b>(0.0072)</b>	<b>-0.0117</b> <b>(0.0092)</b>	<b>-0.0212**</b> <b>(0.0099)</b>
LEV		0.0000* (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)
ISIZE		0.0000 (0.0009)	0.0003 (0.0011)	0.0003 (0.0012)
ROA		-0.0004* (0.0003)	-0.0005* (0.0003)	-0.0005 (0.0003)
MTB		0.0008 (0.0007)	-0.0001 (0.0007)	-0.0004 (0.0007)
ESG Score			-0.0003*** (0.0001)	-0.0003*** (0.0001)
TRUST				0.0022*** (0.0002)
STAKELAW				-0.0139*** (0.0015)
Constant	0.1646*** (0.0272)	0.1615*** (0.0334)	0.1567*** (0.0437)	0.1743*** (0.0443)
Observations	7,773	7,762	3,868	3,691
R-squared	0.3414	0.3441	0.4079	0.4129
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 44. IR, cost of equity and High and Low Enforcement – Sample IIRC (H3a)

VARIABLES	(1)	(2)	(3)	(4)
	Ke CAPM HENF 1	Ke CAPM LENF 1	Ke CAPM Q4ENF 1	Ke CAPM Q1ENF 1
IR	0.0398*** (0.0051)	0.0052 (0.0062)	0.0055 (0.0054)	0.0020 (0.0057)
POST	0.0787*** (0.0036)	0.0324*** (0.0062)	0.0364*** (0.0043)	-0.0283*** (0.0054)
<b>IR * POST</b>	<b>-0.0577***</b> <b>(0.0062)</b>	<b>-0.0009</b> <b>(0.0091)</b>	<b>-0.0145**</b> <b>(0.0062)</b>	<b>0.0023</b> <b>(0.0077)</b>
LEV	0.0001*** (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0012 (0.0015)	0.0014 (0.0016)	-0.0012 (0.0015)	0.0012 (0.0015)
ROA	-0.0007** (0.0003)	-0.0004 (0.0006)	0.0000 (0.0003)	-0.0009* (0.0005)
MTB	-0.0014* (0.0008)	0.0021 (0.0015)	-0.0002 (0.0009)	0.0021 (0.0017)
ESG Score	-0.0002 (0.0001)	-0.0004** (0.0001)	0.0000 (0.0001)	-0.0002 (0.0002)
ENFORC	-0.0891*** (0.0159)	0.2056*** (0.0257)	-0.1433*** (0.0242)	0.0523* (0.0298)
Constant	0.1981*** (0.0436)	-0.2547*** (0.0542)	0.3040*** (0.0558)	0.1498*** (0.0335)
Observations	2,396	1,472	1,071	754
R-squared	0.4958	0.4288	0.4208	0.6007
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 45. IR, cost of equity and Trust – Sample IIRC (H4a)

VARIABLES	(1)	(2)	(3)	(4)
	Ke CAPM TRU2	Ke CAPM TRU2	Ke CAPM TRU2	Ke CAPM TRU2
IR	-0.0056 (0.0137)	-0.0064 (0.0137)	0.0198 (0.0163)	0.0194 (0.0167)
POST	-0.0348*** (0.0116)	-0.0358*** (0.0116)	-0.0012 (0.0157)	-0.0089 (0.0164)
TRUST	-0.0052*** (0.0005)	-0.0052*** (0.0005)	-0.0049*** (0.0005)	0.0015*** (0.0003)
IR * POST	-0.0155 (0.0187)	-0.0175 (0.0188)	-0.0407* (0.0212)	-0.0420* (0.0219)
IR * TRUST	0.0003 (0.0002)	0.0003* (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)
POST * TRUST	0.0013*** (0.0002)	0.0013*** (0.0002)	0.0009*** (0.0002)	0.0010*** (0.0002)
<b>IR * POST * TRUST</b>	<b>-0.0001 (0.0003)</b>	<b>-0.0000 (0.0003)</b>	<b>0.0000 (0.0003)</b>	<b>0.0000 (0.0003)</b>
LEV		0.0000** (0.0000)	0.0000*** (0.0000)	0.0000*** (0.0000)
ISIZE		-0.0000 (0.0009)	0.0002 (0.0011)	0.0003 (0.0011)
ROA		-0.0005* (0.0003)	-0.0005* (0.0003)	-0.0006* (0.0003)
MTB		0.0003 (0.0007)	-0.0004 (0.0007)	-0.0004 (0.0007)
ESG Score			-0.0003*** (0.0001)	-0.0003*** (0.0001)
ENFORC				-0.0685*** (0.0203)
STAKELAW				-0.0135*** (0.0015)
Constant	0.4936*** (0.0431)	0.4836*** (0.0500)	0.4732*** (0.0525)	0.2003*** (0.0459)
Observations	7,300	7,292	3,696	3,691
R-squared	0.3544	0.3583	0.4112	0.4152
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 46. IR, cost of equity and High and Low Trust – Sample IIRC (H4a)

VARIABLES	(1) Ke CAPM HTRU 1	(2) Ke CAPM LTRU 1	(3) Ke CAPM Q4TRU 1	(4) Ke CAPM Q1TRU 1
IR	0.0056 (0.0065)	0.0520*** (0.0055)	-0.0024 (0.0082)	0.0046 (0.0052)
POST	0.0535*** (0.0065)	0.0720*** (0.0046)	0.0323*** (0.0050)	0.0008 (0.0050)
<b>IR * POST</b>	<b>-0.0025</b> <b>(0.0091)</b>	<b>-0.0784***</b> <b>(0.0070)</b>	<b>-0.0042</b> <b>(0.0091)</b>	<b>-0.0131*</b> <b>(0.0067)</b>
LEV	0.0000 (0.0000)	0.0001** (0.0000)	-0.0000 (0.0001)	0.0000 (0.0000)
ISIZE	0.0031 (0.0019)	-0.0008 (0.0014)	-0.0013 (0.0020)	0.0038*** (0.0010)
ROA	0.0007 (0.0005)	-0.0011*** (0.0004)	-0.0000 (0.0004)	-0.0004 (0.0003)
MTB	0.0023* (0.0013)	-0.0009 (0.0008)	0.0022 (0.0015)	0.0002 (0.0008)
ESG Score	-0.0003** (0.0002)	-0.0003*** (0.0001)	-0.0002 (0.0001)	-0.0003*** (0.0001)
ENFORC	-0.0657** (0.0297)	-0.0008 (0.0241)	-0.2448*** (0.0368)	-0.0208 (0.0220)
Constant	0.0721 (0.0695)	0.0467 (0.0524)	0.4995*** (0.0809)	0.0779*** (0.0237)
Observations	1,322	2,374	820	1,060
R-squared	0.3348	0.4674	0.3762	0.4817
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 47. IR, cost of equity and Stakeholder Orientation – Sample IIRC (H5a)

VARIABLES	(1) Ke CAPM SKL2	(2) Ke CAPM SKL2	(3) Ke CAPM SKL2	(4) Ke CAPM SKL2
IR	0.0001 (0.0048)	-0.0019 (0.0048)	0.0037 (0.0061)	0.0039 (0.0061)
POST	0.0766*** (0.0043)	0.0758*** (0.0043)	0.0968*** (0.0056)	0.0976*** (0.0056)
STAKELAW	-0.0090*** (0.0005)	-0.0085*** (0.0005)	-0.0084*** (0.0006)	-0.0132*** (0.0009)
IR * STAKELAW	0.0008** (0.0003)	0.0008** (0.0003)	0.0008* (0.0004)	0.0008* (0.0004)
POST * STAKELAW	-0.0023*** (0.0003)	-0.0023*** (0.0003)	-0.0029*** (0.0004)	-0.0028*** (0.0004)
<b>IR * POST * STAKELAW</b>	<b>-0.0011*** (0.0002)</b>	<b>-0.0010*** (0.0002)</b>	<b>-0.0014*** (0.0002)</b>	<b>-0.0015*** (0.0002)</b>
LEV		0.0000*** (0.0000)	0.0000** (0.0000)	0.0000** (0.0000)
ISIZE		0.0012*** (0.0004)	0.0005 (0.0007)	0.0005 (0.0007)
ROA		-0.0001 (0.0001)	-0.0001 (0.0002)	-0.0001 (0.0002)
MTB		0.0012*** (0.0004)	0.0005 (0.0005)	0.0005 (0.0005)
ESG Score			-0.0002*** (0.0001)	-0.0002*** (0.0001)
ENFORC				-0.0312** (0.0132)
TRUST				0.0024*** (0.0002)
Constant	0.1698*** (0.0089)	0.1339*** (0.0134)	0.1482*** (0.0195)	0.0551** (0.0270)
Observations	18,882	18,806	7,783	7,783
R-squared	0.3142	0.3177	0.3781	0.3790
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 48. IR, cost of equity and High and Low Stakeholder Orientation – Sample IIRC (H5a)

VARIABLES	(1)	(2)	(3)	(4)
	Ke CAPM HSKL 1	Ke CAPM LSKL 1	Ke CAPM Q4SKL 1	Ke CAPM Q1SKL 1
IR	0.0057 (0.0041)	0.0408*** (0.0042)	0.0104** (0.0048)	0.0559*** (0.0102)
POST	0.0145*** (0.0032)	0.0958*** (0.0033)	0.0334*** (0.0038)	0.1084*** (0.0037)
<b>IR * POST</b>	<b>-0.0092*</b> <b>(0.0048)</b>	<b>-0.0598***</b> <b>(0.0057)</b>	<b>-0.0173***</b> <b>(0.0052)</b>	<b>-0.0709***</b> <b>(0.0123)</b>
LEV	0.0000 (0.0000)	0.0000** (0.0000)	0.0000 (0.0000)	0.0001*** (0.0000)
ISIZE	0.0009 (0.0008)	-0.0002 (0.0012)	0.0023 (0.0014)	-0.0039** (0.0019)
ROA	-0.0002 (0.0002)	-0.0002 (0.0003)	-0.0004 (0.0004)	-0.0007** (0.0003)
MTB	0.0023*** (0.0008)	-0.0006 (0.0007)	0.0016 (0.0010)	-0.0017** (0.0009)
ESG Score	-0.0000 (0.0001)	-0.0002** (0.0001)	0.0001 (0.0001)	-0.0002 (0.0001)
ENFORC	-0.0446** (0.0174)	-0.0078 (0.0163)	0.0900*** (0.0176)	-0.2582*** (0.0452)
Constant	0.1089*** (0.0339)	0.1065*** (0.0287)	-0.1924*** (0.0465)	0.2257*** (0.0494)
Observations	3,462	4,321	1,948	2,416
R-squared	0.2658	0.4658	0.3848	0.5003
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX F: RESULTS FOR SAMPLE IIRC – COST OF DEBT**

Table 49. IR and cost of debt – Sample IIRC (H2)

VARIABLES	(1) Ki Net 1	(2) Ki Net 1	(3) Ki Net 1	(4) Ki Net 1	(5) Ki Net 1
IR	-0.0041* (0.0024)	-0.0012 (0.0025)	-0.0017 (0.0025)	-0.0016 (0.0025)	-0.0038 (0.0030)
POST	-0.0066*** (0.0009)	-0.0055*** (0.0009)	-0.0055*** (0.0009)	-0.0055*** (0.0010)	-0.0056*** (0.0014)
<b>IR * POST</b>	<b>-0.0003 (0.0026)</b>	<b>-0.0011 (0.0025)</b>	<b>-0.0007 (0.0024)</b>	<b>-0.0007 (0.0023)</b>	<b>0.0011 (0.0031)</b>
LEV		-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)	-0.0000*** (0.0000)
ISIZE		-0.0032*** (0.0007)	-0.0033*** (0.0007)	-0.0033*** (0.0007)	-0.0034** (0.0014)
ROA				0.0001 (0.0002)	0.0003 (0.0002)
MTB			0.0005 (0.0005)	0.0005 (0.0005)	0.0004 (0.0008)
<b>ESG Score</b>					<b>-0.0000 (0.0001)</b>
Constant	0.0598*** (0.0080)	0.1306*** (0.0172)	0.1293*** (0.0175)	0.1297*** (0.0177)	0.1292*** (0.0297)
Observations	7,398	7,398	7,213	7,213	3,600
R-squared	0.2162	0.2364	0.2382	0.2382	0.2061
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 50. IR, cost of debt and institutional factors – Sample IIRC (H2)

VARIABLES	(1) Ki Net 2	(2) Ki Net 2	(3) Ki Net 2	(4) Ki Net 2	(5) Ki Net 2
IR	-0.0036 (0.0030)	-0.0049 (0.0031)	-0.0049 (0.0031)	-0.0047 (0.0031)	-0.0020 (0.0026)
POST	-0.0053*** (0.0014)	-0.0061*** (0.0014)	-0.0061*** (0.0014)	-0.0058*** (0.0015)	-0.0056*** (0.0010)
<b>IR * POST</b>	<b>0.0009</b> <b>(0.0031)</b>	<b>0.0026</b> <b>(0.0031)</b>	<b>0.0026</b> <b>(0.0031)</b>	<b>0.0023</b> <b>(0.0032)</b>	<b>0.0003</b> <b>(0.0024)</b>
LEV	-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000*** (0.0000)
ISIZE	-0.0033** (0.0014)	-0.0031** (0.0015)	-0.0031** (0.0015)	-0.0031** (0.0015)	-0.0032*** (0.0008)
ROA	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0000 (0.0002)
MTB	0.0004 (0.0008)	0.0006 (0.0008)	0.0006 (0.0008)	0.0006 (0.0008)	0.0006 (0.0006)
<b>ESG Score</b>	<b>-0.0000</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>	
ENFORC	-0.0067 (0.0074)			-0.0100 (0.0071)	-0.0074* (0.0042)
TRUST		0.0004 (0.0004)		-0.0004 (0.0002)	-0.0002 (0.0002)
STAKELAW			0.0009 (0.0009)	0.0021** (0.0009)	0.0015 (0.0010)
Constant	0.1409*** (0.0313)	0.0917** (0.0466)	0.1129*** (0.0334)	0.1483*** (0.0409)	0.1404*** (0.0270)
Observations	3,600	3,445	3,441	3,441	6,731
R-squared	0.2063	0.2094	0.2094	0.2099	0.2377
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 51. IR, cost of debt and Enforcement – Sample IIRC (H3b)

VARIABLES	(1) Ki Net ENF2	(2) Ki Net ENF2	(3) Ki Net ENF2	(4) Ki Net ENF2
IR	-0.0134*** (0.0050)	-0.0118** (0.0054)	-0.0058 (0.0067)	-0.0110 (0.0094)
POST	-0.0041* (0.0023)	-0.0024 (0.0022)	0.0007 (0.0047)	-0.0028 (0.0074)
IR * POST	0.0028 (0.0045)	0.0031 (0.0045)	-0.0002 (0.0063)	0.0075 (0.0088)
ENFORC	-0.0060 (0.0047)	-0.0042 (0.0046)	-0.0027 (0.0079)	-0.0073 (0.0085)
IR * ENFORC	0.0072* (0.0039)	0.0077** (0.0039)	0.0016 (0.0045)	0.0044 (0.0063)
POST * ENFORC	-0.0017 (0.0016)	-0.0022 (0.0015)	-0.0042 (0.0029)	-0.0020 (0.0047)
<b>IR * POST * ENFORC</b>	<b>-0.0025</b> <b>(0.0037)</b>	<b>-0.0030</b> <b>(0.0035)</b>	<b>0.0007</b> <b>(0.0041)</b>	<b>-0.0037</b> <b>(0.0056)</b>
LEV		-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE		-0.0033*** (0.0007)	-0.0034** (0.0014)	-0.0032** (0.0015)
ROA		0.0001 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)
MTB		0.0005 (0.0005)	0.0005 (0.0007)	0.0007 (0.0008)
<b>ESG Score</b>			<b>-0.0000</b> <b>(0.0001)</b>	<b>-0.0000</b> <b>(0.0001)</b>
TRUST				-0.0004 (0.0002)
STAKELAW				0.0020** (0.0009)
Constant	0.0704*** (0.0120)	0.1375*** (0.0196)	0.1361*** (0.0317)	0.1445*** (0.0418)
Observations	7,398	7,213	3,600	3,441
R-squared	0.2184	0.2407	0.2077	0.2107
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 52. IR, cost of debt and High and Low Enforcement – Sample IIRC (H3b)

VARIABLES	(1) Ki Net HENF 1	(2) Ki Net LENF 1	(3) Ki Net Q4ENF 1	(4) Ki Net Q1ENF 1
IR	-0.0075 (0.0046)	0.0002 (0.0032)	-0.0070 (0.0061)	-0.0013 (0.0045)
POST	-0.0088*** (0.0019)	-0.0025 (0.0024)	-0.0040 (0.0028)	-0.0032 (0.0044)
<b>IR * POST</b>	<b>0.0039</b> <b>(0.0041)</b>	<b>-0.0022</b> <b>(0.0040)</b>	<b>-0.0029</b> <b>(0.0045)</b>	<b>0.0035</b> <b>(0.0064)</b>
LEV	-0.0000* (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0043** (0.0021)	-0.0006 (0.0013)	-0.0057*** (0.0020)	0.0021 (0.0020)
ROA	0.0002 (0.0003)	0.0005* (0.0003)	0.0003 (0.0003)	0.0008** (0.0004)
MTB	0.0012 (0.0009)	-0.0009 (0.0008)	0.0019 (0.0015)	-0.0005 (0.0013)
<b>ESG Score</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0001)</b>	<b>-0.0000</b> <b>(0.0001)</b>
ENFORC	0.0007 (0.0131)	-0.0205 (0.0145)	-0.0082 (0.0151)	0.0012 (0.0219)
Constant	0.1574*** (0.0465)	0.0787** (0.0347)	0.1964*** (0.0466)	-0.0008 (0.0460)
Observations	2,207	1,393	979	709
R-squared	0.1929	0.2837	0.2823	0.3057
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 53. IR, cost of debt and Trust – Sample IIRC (H4b)

VARIABLES	(1) Ki Net TRU2	(2) Ki Net TRU2	(3) Ki Net TRU2	(4) Ki Net TRU2
IR	-0.0142 (0.0099)	-0.0159 (0.0098)	-0.0127 (0.0093)	-0.0126 (0.0093)
POST	-0.0057* (0.0033)	-0.0035 (0.0035)	0.0014 (0.0061)	0.0008 (0.0061)
TRUST	0.0005 (0.0004)	0.0003 (0.0004)	0.0004 (0.0004)	-0.0003 (0.0003)
IR * POST	0.0110 (0.0100)	0.0123 (0.0094)	0.0099 (0.0100)	0.0099 (0.0101)
IR * TRUST	0.0001 (0.0001)	0.0002 (0.0001)	0.0001 (0.0001)	0.0001 (0.0001)
POST * TRUST	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0001 (0.0001)	-0.0001 (0.0001)
<b>IR * POST * TRUST</b>	<b>-0.0001 (0.0001)</b>	<b>-0.0002 (0.0001)</b>	<b>-0.0001 (0.0001)</b>	<b>-0.0001 (0.0001)</b>
LEV		-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE		-0.0033*** (0.0008)	-0.0032** (0.0015)	-0.0032** (0.0015)
ROA		0.0000 (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)
MTB		0.0006 (0.0006)	0.0007 (0.0008)	0.0007 (0.0008)
<b>ESG Score</b>			<b>-0.0001 (0.0001)</b>	<b>-0.0001 (0.0001)</b>
ENFORC				-0.0052 (0.0071)
STAKELAW				0.0020** (0.0009)
Constant	0.0171 (0.0313)	0.0986*** (0.0372)	0.0863* (0.0464)	0.1376*** (0.0409)
Observations	6,901	6,742	3,445	3,441
R-squared	0.2184	0.2392	0.2117	0.2118
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 54. IR, cost of debt and High and Low Trust – Sample IIRC (H4b)

VARIABLES	(1) Ki Net HTRU 1	(2) Ki Net LTRU 1	(3) Ki Net Q4TRU 1	(4) Ki Net Q1TRU 1
IR	-0.0017 (0.0038)	-0.0089* (0.0049)	-0.0079 (0.0060)	-0.0074 (0.0069)
POST	-0.0017 (0.0022)	-0.0072*** (0.0019)	-0.0021 (0.0028)	-0.0065** (0.0031)
<b>IR * POST</b>	<b>-0.0057</b> <b>(0.0039)</b>	<b>0.0093*</b> <b>(0.0050)</b>	<b>-0.0032</b> <b>(0.0043)</b>	<b>0.0102*</b> <b>(0.0058)</b>
LEV	-0.0000* (0.0000)	-0.0000 (0.0000)	-0.0001* (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0048*** (0.0016)	-0.0021 (0.0021)	-0.0063*** (0.0022)	-0.0040* (0.0023)
ROA	0.0000 (0.0002)	0.0003 (0.0003)	-0.0000 (0.0003)	0.0007** (0.0003)
MTB	-0.0000 (0.0010)	0.0008 (0.0009)	0.0008 (0.0012)	0.0009 (0.0016)
<b>ESG Score</b>	<b>0.0001*</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0001)</b>	<b>-0.0000</b> <b>(0.0001)</b>
ENFORC	-0.0175** (0.0086)	-0.0051 (0.0110)	-0.0121 (0.0103)	0.0044 (0.0137)
Constant	0.1879*** (0.0402)	0.1395** (0.0544)	0.2154*** (0.0500)	0.1433*** (0.0543)
Observations	1,243	2,202	752	994
R-squared	0.3287	0.1516	0.2460	0.2314
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 55. IR, cost of debt and Stakeholder Orientation – Sample IIRC (H5b)

VARIABLES	(1) Ki Net SKL2	(2) Ki Net SKL2	(3) Ki Net SKL2	(4) Ki Net SKL2
IR	-0.0011 (0.0076)	-0.0011 (0.0074)	-0.0053 (0.0084)	-0.0052 (0.0084)
POST	-0.0057** (0.0027)	-0.0036 (0.0028)	-0.0063* (0.0035)	-0.0061* (0.0035)
STAKELAW	0.0011 (0.0009)	0.0008 (0.0009)	0.0009 (0.0009)	0.0021** (0.0010)
IR * STAKELAW	-0.0002 (0.0005)	-0.0001 (0.0005)	0.0000 (0.0005)	0.0000 (0.0005)
POST * STAKELAW	-0.0001 (0.0002)	-0.0002 (0.0002)	0.0000 (0.0003)	0.0000 (0.0003)
<b>IR * POST * STAKELAW</b>	<b>0.0001</b> <b>(0.0002)</b>	<b>0.0001</b> <b>(0.0002)</b>	<b>0.0002</b> <b>(0.0002)</b>	<b>0.0001</b> <b>(0.0002)</b>
LEV		-0.0000*** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE		-0.0032*** (0.0008)	-0.0032** (0.0015)	-0.0031** (0.0015)
ROA		0.0000 (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)
MTB		0.0006 (0.0006)	0.0006 (0.0008)	0.0006 (0.0008)
<b>ESG Score</b>			<b>-0.0001</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>
ENFORC				-0.0100 (0.0071)
TRUST				-0.0004 (0.0003)
Constant	0.0433*** (0.0107)	0.1158*** (0.0203)	0.1132*** (0.0332)	0.1494*** (0.0409)
Observations	6,890	6,731	3,441	3,441
R-squared	0.2175	0.2376	0.2095	0.2099
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 56. IR, cost of debt and High and Low Stakeholder Orientation – Sample IIRC (H5b)

VARIABLES	(1) Ki Net HSKL 1	(2) Ki Net LSKL 1	(3) Ki Net Q4SKL 1	(4) Ki Net Q1SKL 1
IR	-0.0085** (0.0043)	-0.0025 (0.0045)	-0.0116** (0.0058)	-0.0097* (0.0057)
POST	-0.0040* (0.0024)	-0.0065*** (0.0018)	-0.0093** (0.0041)	-0.0076*** (0.0020)
<b>IR * POST</b>	<b>0.0014</b> <b>(0.0032)</b>	<b>0.0032</b> <b>(0.0051)</b>	<b>0.0065</b> <b>(0.0047)</b>	<b>0.0005</b> <b>(0.0040)</b>
LEV	-0.0001*** (0.0000)	-0.0000 (0.0000)	-0.0001** (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0034** (0.0014)	-0.0031 (0.0024)	-0.0042* (0.0024)	0.0010 (0.0036)
ROA	0.0001 (0.0003)	0.0005 (0.0003)	0.0007 (0.0006)	0.0000 (0.0004)
MTB	0.0010 (0.0010)	0.0003 (0.0010)	0.0014 (0.0011)	0.0005 (0.0010)
<b>ESG Score</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0002)</b>	<b>-0.0003*</b> <b>(0.0001)</b>
ENFORC	-0.0111 (0.0078)	-0.0128 (0.0112)	-0.0277* (0.0146)	-0.0133 (0.0133)
Constant	0.1532*** (0.0337)	0.1364*** (0.0520)	0.2177*** (0.0680)	0.0585 (0.0866)
Observations	1,319	2,122	753	1,200
R-squared	0.2398	0.2299	0.3102	0.1728
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 57. IR, cost of debt and assurance – Sample IIRC

VARIABLES	(1)	(2)
	Ki Net 3	Ki Net 4
IR	-0.0040 (0.0032)	-0.0041 (0.0061)
POST	-0.0056*** (0.0015)	-0.0057*** (0.0017)
CSR ASSUR	-0.0042* (0.0025)	-0.0037 (0.0032)
<b>IR * POST</b>	<b>0.0023</b> <b>(0.0032)</b>	<b>0.0072</b> <b>(0.0119)</b>
IR * CSR ASSUR		-0.0000 (0.0064)
POST * CSR ASSUR		0.0003 (0.0029)
<b>IR * POST * CSR ASSUR</b>		<b>-0.0062</b> <b>(0.0124)</b>
LEV	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0028* (0.0015)	-0.0027* (0.0015)
ROA	0.0002 (0.0002)	0.0002 (0.0002)
MTB	0.0006 (0.0008)	0.0006 (0.0007)
ESG Score	-0.0000 (0.0001)	-0.0000 (0.0001)
ENFORC	-0.0097 (0.0070)	-0.0095 (0.0070)
TRUST	-0.0004* (0.0003)	-0.0004* (0.0002)
STAKELAW	0.0022** (0.0010)	0.0022** (0.0009)
Constant	0.1405*** (0.0406)	0.1378*** (0.0397)
Observations	3,441	3,441
R-squared	0.2119	0.2125
Country FE	YES	YES
Industry FE	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 58. IR, cost of debt and Big4– Sample IIRC

VARIABLES	(1) Ki Net 3	(2) Ki Net 4
IR	-0.0046 (0.0032)	-0.0025 (0.0040)
POST	-0.0058*** (0.0015)	-0.0058*** (0.0015)
CSR BIG 4	-0.0008 (0.0026)	0.0031 (0.0047)
<b>IR * POST</b>	<b>0.0023</b> <b>(0.0032)</b>	<b>0.0041</b> <b>(0.0055)</b>
IR * CSR BIG 4		-0.0069 (0.0058)
POST * CSR BIG 4		-0.0005 (0.0043)
<b>IR * POST * CSR BIG 4</b>		<b>-0.0023</b> <b>(0.0072)</b>
LEV	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0031** (0.0015)	-0.0030** (0.0015)
ROA	0.0002 (0.0002)	0.0002 (0.0002)
MTB	0.0006 (0.0008)	0.0006 (0.0008)
ESG Score	-0.0000 (0.0001)	-0.0001 (0.0001)
ENFORC	-0.0099 (0.0070)	-0.0100 (0.0070)
TRUST	-0.0004 (0.0003)	-0.0004 (0.0003)
STAKELAW	0.0021** (0.0010)	0.0021** (0.0010)
Constant	0.1469*** (0.0402)	0.1444*** (0.0399)
Observations	3,441	3,441
R-squared	0.2099	0.2120
Country FE	YES	YES
Industry FE	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 59. IR, cost of debt, High and Low Enforcement and Assurance – Sample IIRC

VARIABLES	(1) Ki Net HENF 1	(2) Ki Net HENF 2	(3) Ki Net LENF 3	(4) Ki Net LENF 4
IR	-0.0065 (0.0047)	-0.0101 (0.0074)	0.0008 (0.0035)	0.0034 (0.0070)
POST	-0.0087*** (0.0019)	-0.0095*** (0.0021)	-0.0021 (0.0025)	-0.0002 (0.0031)
CSR ASSUR	-0.0051 (0.0032)	-0.0059 (0.0041)	-0.0037 (0.0034)	-0.0021 (0.0047)
IR * POST	0.0040 (0.0041)	0.0214 (0.0177)	-0.0026 (0.0041)	-0.0149* (0.0085)
IR * CSR ASSUR		0.0054 (0.0069)		-0.0048 (0.0082)
POST * CSR ASSUR		0.0029 (0.0039)		-0.0046 (0.0046)
<b>IR * POST * CSR ASSUR</b>		<b>-0.0235 (0.0186)</b>		<b>0.0183** (0.0093)</b>
LEV	-0.0000** (0.0000)	-0.0000** (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0038* (0.0021)	-0.0036* (0.0021)	-0.0003 (0.0013)	-0.0003 (0.0013)
ROA	0.0002 (0.0003)	0.0002 (0.0003)	0.0005* (0.0003)	0.0005* (0.0003)
MTB	0.0012 (0.0009)	0.0012 (0.0008)	-0.0009 (0.0008)	-0.0008 (0.0008)
ESG Score	-0.0000 (0.0001)	-0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
ENFORC	0.0011 (0.0130)	0.0023 (0.0126)	-0.0203 (0.0143)	-0.0201 (0.0141)
Constant	0.1461*** (0.0463)	0.1409*** (0.0445)	0.0719** (0.0345)	0.0713** (0.0345)
Observations	2,207	2,207	1,393	1,393
R-squared	0.1955	0.1999	0.2857	0.2905
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 60. IR, cost of debt, High and Low Enforcement and Assurance Big 4 – Sample IIRC

VARIABLES	(1) Ki Net HENF 1	(2) Ki Net HENF 2	(3) Ki Net LENF 3	(4) Ki Net LENF 4
IR	-0.0072 (0.0047)	-0.0092* (0.0056)	0.0001 (0.0033)	0.0035 (0.0042)
POST	-0.0088*** (0.0019)	-0.0091*** (0.0019)	-0.0025 (0.0024)	-0.0016 (0.0023)
CSR BIG 4	-0.0015 (0.0034)	-0.0025 (0.0065)	0.0006 (0.0030)	0.0067 (0.0067)
IR * POST	0.0040 (0.0041)	0.0098 (0.0082)	-0.0022 (0.0040)	-0.0049 (0.0054)
IR * CSR BIG 4		0.0052 (0.0078)		-0.0124* (0.0072)
POST * CSR BIG 4		0.0029 (0.0060)		-0.0052 (0.0065)
<b>IR * POST * CSR BIG 4</b>		<b>-0.0129 (0.0105)</b>		<b>0.0103 (0.0084)</b>
LEV	-0.0000* (0.0000)	-0.0000* (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0041** (0.0021)	-0.0040* (0.0021)	-0.0007 (0.0013)	-0.0006 (0.0013)
ROA	0.0002 (0.0003)	0.0002 (0.0003)	0.0005* (0.0003)	0.0005* (0.0003)
MTB	0.0013 (0.0009)	0.0013 (0.0009)	-0.0009 (0.0008)	-0.0008 (0.0008)
ESG Score	-0.0001 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)	-0.0000 (0.0001)
ENFORC	0.0008 (0.0130)	0.0018 (0.0127)	-0.0205 (0.0145)	-0.0205 (0.0144)
Constant	0.1549*** (0.0458)	0.1513*** (0.0448)	0.0795** (0.0349)	0.0805** (0.0344)
Observations	2,207	2,207	1,393	1,393
R-squared	0.1931	0.1944	0.2838	0.2866
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 61. IR, cost of debt, High and Low Trust and Assurance – Sample IIRC

VARIABLES	(1) Ki Net HTRU 1	(2) Ki Net HTRU 2	(3) Ki Net LTRU 3	(4) Ki Net LTRU 4
IR	0.0016 (0.0032)	-0.0010 (0.0047)	-0.0062* (0.0034)	-0.0045 (0.0054)
POST	-0.0015 (0.0018)	-0.0017 (0.0021)	-0.0058*** (0.0016)	-0.0069*** (0.0019)
CSR ASSUR	-0.0034 (0.0026)	-0.0034 (0.0030)	-0.0009 (0.0025)	-0.0014 (0.0031)
<b>IR * POST</b>	<b>-0.0027</b> <b>(0.0033)</b>	<b>0.0024</b> <b>(0.0063)</b>	<b>0.0025</b> <b>(0.0037)</b>	<b>0.0069</b> <b>(0.0090)</b>
IR * CSR ASSUR		0.0042 (0.0057)		-0.0018 (0.0055)
POST * CSR ASSUR		0.0003 (0.0028)		0.0035 (0.0033)
<b>IR * POST * CSR ASSUR</b>		<b>-0.0083</b> <b>(0.0069)</b>		<b>-0.0080</b> <b>(0.0095)</b>
LEV	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)
ISIZE	-0.0052*** (0.0011)	-0.0051*** (0.0011)	-0.0025** (0.0013)	-0.0026** (0.0013)
ROA	0.0004** (0.0002)	0.0004** (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)
MTB	0.0002 (0.0011)	0.0002 (0.0011)	0.0008 (0.0007)	0.0008 (0.0007)
ESG Score	0.0001* (0.0001)	0.0001* (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)
ENFORC	-0.0180** (0.0077)	-0.0174** (0.0077)	-0.0111 (0.0086)	-0.0105 (0.0085)
Constant	0.1956*** (0.0299)	0.1939*** (0.0296)	0.1549*** (0.0393)	0.1551*** (0.0394)
Observations	2,686	2,686	4,477	4,477
R-squared	0.2630	0.2639	0.1254	0.1269
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 62. IR, cost of debt, High and Low Trust and Assurance Big 4 – Sample IIRC

VARIABLES	(1) Ki Net HTRU 1	(2) Ki Net HTRU 2	(3) Ki Net LTRU 3	(4) Ki Net LTRU 4
IR	0.0013 (0.0032)	0.0005 (0.0034)	-0.0061* (0.0034)	-0.0047 (0.0041)
POST	-0.0017 (0.0018)	-0.0015 (0.0018)	-0.0058*** (0.0016)	-0.0060*** (0.0018)
CSR BIG 4	0.0001 (0.0028)	0.0026 (0.0040)	-0.0019 (0.0029)	-0.0003 (0.0044)
<b>IR * POST</b>	<b>-0.0027</b> <b>(0.0033)</b>	<b>-0.0005</b> <b>(0.0043)</b>	<b>0.0025</b> <b>(0.0037)</b>	<b>0.0036</b> <b>(0.0055)</b>
IR * CSR BIG 4		0.0006 (0.0067)		-0.0037 (0.0056)
POST * CSR BIG 4		-0.0024 (0.0043)		0.0014 (0.0042)
<b>IR * POST * CSR BIG 4</b>		<b>-0.0036</b> <b>(0.0069)</b>		<b>-0.0032</b> <b>(0.0070)</b>
LEV	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)
ISIZE	-0.0054*** (0.0011)	-0.0054*** (0.0011)	-0.0025* (0.0013)	-0.0025* (0.0013)
ROA	0.0004** (0.0002)	0.0004** (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)
MTB	0.0002 (0.0011)	0.0002 (0.0011)	0.0008 (0.0007)	0.0008 (0.0007)
ESG Score	0.0001 (0.0001)	0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)
ENFORC	-0.0182** (0.0077)	-0.0182** (0.0077)	-0.0111 (0.0085)	-0.0106 (0.0085)
Constant	0.2025*** (0.0302)	0.2014*** (0.0300)	0.1544*** (0.0398)	0.1530*** (0.0394)
Observations	2,686	2,686	4,477	4,477
R-squared	0.2617	0.2623	0.1255	0.1263
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 63. IR, cost of debt, High and Low Stakeholder Orientation and Assurance – Sample IIRC

VARIABLES	(1) Ki Net HSKL 1	(2) Ki Net HSKL 2	(3) Ki Net LSKL 3	(4) Ki Net LSKL 4
IR	-0.0018 (0.0031)	-0.0057 (0.0043)	-0.0010 (0.0035)	0.0014 (0.0056)
POST	-0.0030 (0.0018)	-0.0023 (0.0026)	-0.0055*** (0.0016)	-0.0068*** (0.0017)
CSR ASSUR	-0.0016 (0.0028)	0.0001 (0.0033)	-0.0022 (0.0024)	-0.0037 (0.0032)
<b>IR * POST</b>	<b>0.0004</b> <b>(0.0031)</b>	<b>0.0077</b> <b>(0.0066)</b>	<b>-0.0013</b> <b>(0.0042)</b>	<b>0.0013</b> <b>(0.0086)</b>
IR * CSR ASSUR		0.0047 (0.0049)		-0.0027 (0.0063)
POST * CSR ASSUR		-0.0021 (0.0035)		0.0056 (0.0036)
<b>IR * POST * CSR ASSUR</b>		<b>-0.0091</b> <b>(0.0072)</b>		<b>-0.0077</b> <b>(0.0096)</b>
LEV	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0035*** (0.0011)	-0.0035*** (0.0011)	-0.0035** (0.0015)	-0.0036** (0.0015)
ROA	0.0003 (0.0002)	0.0003 (0.0002)	0.0005** (0.0002)	0.0004** (0.0002)
MTB	0.0006 (0.0009)	0.0007 (0.0009)	0.0006 (0.0008)	0.0006 (0.0008)
ESG Score	-0.0001 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
ENFORC	-0.0113* (0.0067)	-0.0121* (0.0067)	-0.0149* (0.0087)	-0.0154* (0.0088)
Constant	0.1618*** (0.0257)	0.1620*** (0.0254)	0.1555*** (0.0320)	0.1582*** (0.0321)
Observations	3,143	3,143	4,001	4,001
R-squared	0.1688	0.1704	0.1926	0.1947
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 64. IR, cost of debt, High and Low Stakeholder Orientation and Assurance Big 4 – Sample IIRC

VARIABLES	(1) Ki Net HSKL 1	(2) Ki Net HSKL 2	(3) Ki Net LSKL 3	(4) Ki Net LSKL 4
IR	-0.0024 (0.0032)	-0.0056 (0.0036)	-0.0010 (0.0034)	0.0009 (0.0038)
POST	-0.0033* (0.0018)	-0.0032 (0.0022)	-0.0055*** (0.0016)	-0.0054*** (0.0016)
CSR BIG 4	0.0026 (0.0025)	0.0027 (0.0033)	-0.0039 (0.0032)	0.0049 (0.0078)
<b>IR * POST</b>	<b>0.0003</b> <b>(0.0031)</b>	<b>0.0057</b> <b>(0.0045)</b>	<b>-0.0012</b> <b>(0.0042)</b>	<b>-0.0009</b> <b>(0.0051)</b>
IR * CSR BIG 4		0.0061 (0.0049)		-0.0145 (0.0089)
POST * CSR BIG 4		-0.0003 (0.0037)		-0.0039 (0.0076)
<b>IR * POST * CSR BIG 4</b>		<b>-0.0094</b> <b>(0.0060)</b>		<b>0.0037</b> <b>(0.0096)</b>
LEV	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0038*** (0.0011)	-0.0037*** (0.0011)	-0.0035** (0.0015)	-0.0034** (0.0014)
ROA	0.0003 (0.0002)	0.0003 (0.0002)	0.0004** (0.0002)	0.0004** (0.0002)
MTB	0.0007 (0.0009)	0.0007 (0.0009)	0.0006 (0.0008)	0.0007 (0.0008)
ESG Score	-0.0001 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)	-0.0000 (0.0001)
ENFORC	-0.0109 (0.0067)	-0.0117* (0.0067)	-0.0148* (0.0087)	-0.0145* (0.0087)
Constant	0.1674*** (0.0260)	0.1681*** (0.0257)	0.1549*** (0.0318)	0.1540*** (0.0317)
Observations	3,143	3,143	4,001	4,001
R-squared	0.1692	0.1706	0.1928	0.1946
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**APPENDIX G: RESULTS FOR SAMPLE IIRC – COST OF DEBT (CREDIT RATING)**

Table 65. IR and cost of debt (credit rating) – Sample IIRC (H2)

VARIABLES	(1) Rating 1	(2) Rating 1	(3) Rating 1	(4) Rating 1	(5) Rating 1
IR	0.9451*** (0.2348)	0.4466** (0.2233)	0.4264** (0.2086)	0.4702** (0.2079)	0.0660 (0.2366)
POST	0.1864 (0.1195)	0.1004 (0.1153)	-0.0331 (0.1162)	0.1129 (0.1154)	0.0493 (0.1406)
<b>IR * POST</b>	<b>-0.2352</b> <b>(0.2120)</b>	<b>-0.1553</b> <b>(0.1978)</b>	<b>-0.2255</b> <b>(0.1961)</b>	<b>-0.2924</b> <b>(0.1950)</b>	<b>-0.0360</b> <b>(0.2499)</b>
LEV		-0.0077*** (0.0012)	-0.0104*** (0.0013)	-0.0083*** (0.0013)	-0.0075*** (0.0011)
ISIZE		0.7925*** (0.0828)	0.8140*** (0.0806)	0.7900*** (0.0780)	0.6719*** (0.0922)
ROA				0.1042*** (0.0165)	0.1008*** (0.0171)
MTB			0.3815*** (0.0435)	0.2579*** (0.0429)	0.2095*** (0.0425)
<b>ESG Score</b>					<b>0.0215***</b> <b>(0.0056)</b>
Constant	15.8516*** (0.8736)	-0.9607 (1.8853)	-1.6152 (1.8254)	-1.5978 (1.7488)	0.6869 (2.0217)
Observations	3,950	3,950	3,921	3,921	2,379
R-squared	0.2592	0.3580	0.3945	0.4098	0.4418
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 66. IR, cost of debt (credit rating) and institutional factors – Sample IIRC (H2)

VARIABLES	(1) Rating 2	(2) Rating 2	(3) Rating 2	(4) Rating 2	(5) Rating 2
IR	0.0869 (0.2364)	0.0343 (0.2441)	0.0343 (0.2441)	0.0513 (0.2441)	0.3707* (0.2065)
POST	0.0783 (0.1431)	0.0178 (0.1434)	0.0178 (0.1434)	0.0430 (0.1460)	0.0442 (0.1136)
<b>IR * POST</b>	<b>-0.0629</b> <b>(0.2493)</b>	<b>-0.0138</b> <b>(0.2499)</b>	<b>-0.0138</b> <b>(0.2499)</b>	<b>-0.0360</b> <b>(0.2490)</b>	<b>-0.2418</b> <b>(0.1893)</b>
LEV	-0.0075*** (0.0011)	-0.0076*** (0.0012)	-0.0076*** (0.0012)	-0.0076*** (0.0012)	-0.0090*** (0.0010)
ISIZE	0.6750*** (0.0926)	0.6972*** (0.0945)	0.6972*** (0.0945)	0.6996*** (0.0948)	0.8707*** (0.0739)
ROA	0.1008*** (0.0171)	0.1016*** (0.0178)	0.1016*** (0.0178)	0.1016*** (0.0178)	0.1097*** (0.0168)
MTB	0.2098*** (0.0426)	0.2081*** (0.0431)	0.2081*** (0.0431)	0.2085*** (0.0431)	0.2633*** (0.0415)
<b>ESG Score</b>	<b>0.0215***</b> <b>(0.0056)</b>	<b>0.0223***</b> <b>(0.0057)</b>	<b>0.0223***</b> <b>(0.0057)</b>	<b>0.0224***</b> <b>(0.0057)</b>	
ENFORC	-0.9230 (0.6812)			-0.8359 (0.6594)	-0.2971 (0.5044)
TRUST		0.0206 (0.0225)		-0.0181 (0.0159)	-0.0283* (0.0153)
STAKELAW			0.0487 (0.0532)	0.1146 (0.0739)	0.1005 (0.0718)
Constant	2.2490 (2.2199)	-1.8054 (2.8152)	-0.6285 (2.1622)	1.4850 (2.4570)	-1.6194 (2.0576)
Observations	2,379	2,259	2,259	2,259	3,693
R-squared	0.4423	0.4539	0.4539	0.4542	0.4593
Country FE	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 67. IR, cost of debt (credit rating) and Enforcement – Sample IIRC (H3b)

VARIABLES	(1) Rating ENF2	(2) Rating ENF2	(3) Rating ENF2	(4) Rating ENF2
IR	0.9064 (0.8767)	1.0514 (0.8756)	1.2128 (0.8333)	1.1901 (1.1349)
POST	-0.1081 (0.4179)	0.2094 (0.4214)	0.2504 (0.4945)	0.0433 (0.7575)
IR * POST	-0.1828 (0.8359)	-0.3827 (0.8035)	-0.8736 (0.9149)	-0.9913 (1.1883)
ENFORC	0.4468 (0.6659)	0.4019 (0.6426)	-0.7748 (0.7187)	-0.8919 (0.7281)
IR * ENFORC	0.0240 (0.6047)	-0.4608 (0.6010)	-0.8504 (0.5508)	-0.8290 (0.7518)
POST * ENFORC	0.2051 (0.2775)	-0.0850 (0.2776)	-0.1258 (0.3144)	0.0017 (0.4802)
<b>IR * POST * ENFORC</b>	<b>-0.0288</b> <b>(0.5599)</b>	<b>0.0735</b> <b>(0.5323)</b>	<b>0.6077</b> <b>(0.5934)</b>	<b>0.7006</b> <b>(0.7707)</b>
LEV		-0.0084*** (0.0013)	-0.0077*** (0.0011)	-0.0077*** (0.0012)
ISIZE		0.7949*** (0.0797)	0.6922*** (0.0915)	0.7168*** (0.0935)
ROA		0.1037*** (0.0165)	0.1002*** (0.0170)	0.1016*** (0.0177)
MTB		0.2578*** (0.0427)	0.2110*** (0.0423)	0.2067*** (0.0427)
<b>ESG Score</b>			<b>0.0209***</b> <b>(0.0055)</b>	<b>0.0216***</b> <b>(0.0056)</b>
TRUST				-0.0212 (0.0158)
STAKELAW				0.1272* (0.0736)
Constant	14.9928*** (1.4554)	-2.3290 (1.9733)	1.7381 (2.2515)	1.3967 (2.5506)
Observations	3,950	3,921	2,379	2,259
R-squared	0.2597	0.4106	0.4442	0.4557
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 68. IR, cost of debt (credit rating) and High and Low Enforcement – Sample IIRC (H3b)

VARIABLES	(1) Rating HENF 1	(2) Rating LENF 1	(3) Rating Q4ENF 1	(4) Rating Q1ENF 1
IR	0.1303 (0.3329)	0.2020 (0.3431)	0.0776 (0.4940)	0.6278 (0.4505)
POST	0.2716* (0.1611)	-0.0542 (0.2798)	0.0190 (0.3208)	0.0294 (0.4437)
<b>IR * POST</b>	<b>-0.1550</b> <b>(0.3007)</b>	<b>0.0249</b> <b>(0.3895)</b>	<b>0.2373</b> <b>(0.4606)</b>	<b>0.0390</b> <b>(0.6388)</b>
LEV	-0.0081*** (0.0013)	-0.0067*** (0.0018)	-0.0087*** (0.0024)	-0.0077*** (0.0026)
ISIZE	0.9187*** (0.1134)	0.4693*** (0.1348)	0.9876*** (0.1964)	0.4723** (0.2368)
ROA	0.1055*** (0.0181)	0.0993*** (0.0341)	0.0966*** (0.0246)	0.0433 (0.0576)
MTB	0.2100*** (0.0472)	0.2276** (0.0911)	0.1745** (0.0761)	0.4365** (0.1683)
<b>ESG Score</b>	<b>0.0335***</b> <b>(0.0066)</b>	<b>-0.0024</b> <b>(0.0085)</b>	<b>0.0247*</b> <b>(0.0138)</b>	<b>-0.0105</b> <b>(0.0157)</b>
ENFORC	-2.0042* (1.0917)	-1.8477 (1.4692)	-3.1893* (1.8431)	-2.0175 (2.3866)
Constant	-2.1563 (3.2055)	8.7689** (3.4731)	-0.4196 (5.9794)	6.4760 (5.3727)
Observations	1,364	1,015	484	507
R-squared	0.5049	0.3840	0.5947	0.3357
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 69. IR, cost of debt (credit rating) and Trust – Sample IIRC (H4b)

VARIABLES	(1) Rating TRU2	(2) Rating TRU2	(3) Rating TRU2	(4) Rating TRU2
IR	0.2125 (1.2721)	0.3484 (1.1359)	-0.0760 (1.1525)	-0.0785 (1.1491)
POST	-0.8064 (0.6958)	-0.3248 (0.6861)	-0.3181 (0.8258)	-0.4235 (0.8165)
TRUST	0.0266 (0.0501)	0.0115 (0.0265)	0.0205 (0.0244)	-0.0208 (0.0183)
IR * POST	0.3502 (1.2803)	0.8789 (1.1890)	0.7823 (1.2353)	0.7582 (1.2348)
IR * TRUST	0.0092 (0.0163)	0.0000 (0.0143)	0.0014 (0.0144)	0.0017 (0.0144)
POST * TRUST	0.0130 (0.0090)	0.0049 (0.0088)	0.0046 (0.0105)	0.0064 (0.0104)
<b>IR * POST * TRUST</b>	<b>-0.0072</b> <b>(0.0162)</b>	<b>-0.0154</b> <b>(0.0150)</b>	<b>-0.0111</b> <b>(0.0155)</b>	<b>-0.0110</b> <b>(0.0154)</b>
LEV		-0.0091*** (0.0010)	-0.0077*** (0.0012)	-0.0077*** (0.0012)
ISIZE		0.8774*** (0.0739)	0.7041*** (0.0930)	0.7069*** (0.0933)
ROA		0.1100*** (0.0169)	0.1017*** (0.0179)	0.1015*** (0.0179)
MTB		0.2614*** (0.0415)	0.2093*** (0.0433)	0.2095*** (0.0433)
<b>ESG Score</b>			<b>0.0220***</b> <b>(0.0057)</b>	<b>0.0221***</b> <b>(0.0057)</b>
ENFORC				-0.8955 (0.6073)
STAKELAW				0.1182 (0.0737)
Constant	13.2646*** (4.0372)	-4.5309* (2.7306)	-2.0116 (2.8981)	1.5430 (2.5381)
Observations	3,720	3,693	2,259	2,259
R-squared	0.2743	0.4602	0.4544	0.4548
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 70. IR, cost of debt (credit rating) and High and Low Trust – Sample IIRC (H4b)

VARIABLES	(1) Rating HTRU 1	(2) Rating LTRU 1	(3) Rating Q4TRU 1	(4) Rating Q1TRU 1
IR	-0.0682 (0.2927)	0.1144 (0.4114)	0.2710 (0.5785)	-0.0651 (0.5750)
POST	-0.2347 (0.2751)	0.0915 (0.1667)	0.3359 (0.4961)	-0.2938 (0.3838)
<b>IR * POST</b>	<b>0.2243</b> <b>(0.3124)</b>	<b>-0.0167</b> <b>(0.3878)</b>	<b>-0.2227</b> <b>(0.6041)</b>	<b>0.2031</b> <b>(0.5779)</b>
LEV	-0.0099*** (0.0017)	-0.0077*** (0.0014)	-0.0127*** (0.0031)	-0.0064** (0.0028)
ISIZE	0.8803*** (0.1230)	0.6268*** (0.1216)	1.0274*** (0.2229)	0.3713** (0.1775)
ROA	0.0984*** (0.0270)	0.0958*** (0.0230)	0.1000*** (0.0346)	0.0553 (0.0423)
MTB	0.1240* (0.0674)	0.2179*** (0.0517)	0.2558** (0.1030)	0.1799* (0.1031)
<b>ESG Score</b>	<b>-0.0061</b> <b>(0.0088)</b>	<b>0.0402***</b> <b>(0.0072)</b>	<b>0.0153</b> <b>(0.0167)</b>	<b>0.0453***</b> <b>(0.0136)</b>
ENFORC	-0.4741 (0.6606)	-0.6826 (1.1087)	-0.8206 (1.5031)	-1.2537 (1.4007)
Constant	-0.8394 (2.9238)	-0.5374 (3.1276)	-5.8037 (5.9286)	6.4585 (4.2954)
Observations	777	1,482	359	604
R-squared	0.5538	0.3745	0.5789	0.2992
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 71. IR, cost of debt (credit rating) and Stakeholder Orientation – Sample IIRC (H5b)

VARIABLES	(1) Rating SKL2	(2) Rating SKL2	(3) Rating SKL2	(4) Rating SKL2
IR	-0.5127 (0.7188)	-0.3740 (0.6517)	-0.5227 (0.6650)	-0.5165 (0.6656)
POST	-0.2079 (0.3171)	-0.1027 (0.2965)	-0.1259 (0.3352)	-0.0988 (0.3338)
STAKELAW	0.0703 (0.1174)	0.0166 (0.0607)	0.0401 (0.0557)	0.1139 (0.0755)
IR * STAKELAW	0.0977** (0.0483)	0.0486 (0.0421)	0.0355 (0.0429)	0.0362 (0.0429)
POST * STAKELAW	0.0267 (0.0243)	0.0084 (0.0228)	0.0092 (0.0259)	0.0091 (0.0259)
<b>IR * POST * STAKELAW</b>	<b>-0.0113</b> <b>(0.0145)</b>	<b>-0.0098</b> <b>(0.0132)</b>	<b>0.0033</b> <b>(0.0167)</b>	<b>0.0017</b> <b>(0.0168)</b>
LEV		-0.0090*** (0.0010)	-0.0076*** (0.0012)	-0.0076*** (0.0012)
ISIZE		0.8677*** (0.0740)	0.6920*** (0.0941)	0.6942*** (0.0944)
ROA		0.1086*** (0.0167)	0.1003*** (0.0178)	0.1003*** (0.0177)
MTB		0.2644*** (0.0415)	0.2081*** (0.0431)	0.2086*** (0.0431)
<b>ESG Score</b>			<b>0.0228***</b> <b>(0.0057)</b>	<b>0.0228***</b> <b>(0.0057)</b>
ENFORC				-0.8049 (0.6590)
TRUST				-0.0218 (0.0166)
Constant	14.7927*** (1.2783)	-3.4569** (1.7553)	-0.4069 (2.1559)	1.8741 (2.4868)
Observations	3,720	3,693	2,259	2,259
R-squared	0.2756	0.4596	0.4544	0.4548
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 72. IR, cost of debt (credit rating) and High and Low Stakeholder Orientation – Sample IIRC (H5b)

VARIABLES	(1) Rating HSKL 1	(2) Rating LSKL 1	(3) Rating Q4SKL 1	(4) Rating Q1SKL 1
IR	0.2200 (0.4518)	-0.2433 (0.2905)	0.3745 (0.5751)	0.6741 (0.9641)
POST	0.1264 (0.3269)	-0.0470 (0.1594)	-0.0904 (0.3644)	0.2065 (0.1840)
<b>IR * POST</b>	<b>0.1837</b> <b>(0.4475)</b>	<b>-0.1308</b> <b>(0.3177)</b>	<b>0.2611</b> <b>(0.4918)</b>	<b>-1.4321</b> <b>(1.0733)</b>
LEV	-0.0071*** (0.0025)	-0.0076*** (0.0013)	-0.0025 (0.0024)	-0.0090*** (0.0017)
ISIZE	0.6821*** (0.1188)	0.7174*** (0.1329)	0.8328*** (0.1811)	0.7263*** (0.1797)
ROA	0.1188*** (0.0287)	0.0870*** (0.0219)	0.0995** (0.0420)	0.0962*** (0.0281)
MTB	0.2237*** (0.0766)	0.2135*** (0.0506)	0.2271*** (0.0856)	0.2394*** (0.0622)
<b>ESG Score</b>	<b>0.0226**</b> <b>(0.0113)</b>	<b>0.0241***</b> <b>(0.0068)</b>	<b>0.0143</b> <b>(0.0172)</b>	<b>0.0370***</b> <b>(0.0088)</b>
ENFORC	0.0159 (1.2235)	-1.1796 (0.7773)	-1.6818 (1.2898)	-0.4690 (2.2461)
Constant	-0.5557 (3.1649)	-0.1167 (3.1296)	-2.2157 (4.7759)	-3.9725 (4.5262)
Observations	751	1,508	462	854
R-squared	0.4920	0.4573	0.5461	0.4282
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 73. IR, cost of cost of debt (credit rating) and assurance – Sample IIRC

VARIABLES	(1) Rating 3	(2) Rating 4
IR	0.0107 (0.2455)	-0.1022 (0.4067)
POST	0.0283 (0.1462)	-0.0014 (0.1896)
CSR ASSUR	0.3520* (0.1906)	0.2822 (0.3087)
<b>IR * POST</b>	<b>-0.0389</b> <b>(0.2490)</b>	<b>0.1585</b> <b>(0.3392)</b>
IR * CSR ASSUR		0.1842 (0.4633)
POST * CSR ASSUR		0.0863 (0.2853)
<b>IR * POST * CSR ASSUR</b>		<b>-0.2970</b> <b>(0.4539)</b>
LEV	-0.0076*** (0.0012)	-0.0076*** (0.0012)
ISIZE	0.6653*** (0.0932)	0.6650*** (0.0937)
ROA	0.1011*** (0.0179)	0.1014*** (0.0179)
MTB	0.2082*** (0.0434)	0.2080*** (0.0434)
<b>ESG Score</b>	<b>0.0194***</b> <b>(0.0058)</b>	<b>0.0194***</b> <b>(0.0059)</b>
ENFORC	-0.8396 (0.6555)	-0.8331 (0.6565)
TRUST	-0.0132 (0.0166)	-0.0135 (0.0165)
STAKELAW	0.0905 (0.0766)	0.0916 (0.0769)
Constant	2.1984 (2.4357)	2.2249 (2.4290)
Observations	2,259	2,259
R-squared	0.4559	0.4560
Country FE	YES	YES
Industry FE	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 74. IR, cost of debt (credit rating) and Big4– Sample IIRC

VARIABLES	(1) Rating 3	(2) Rating 4
IR	0.0633 (0.2459)	-0.0422 (0.2974)
POST	0.0442 (0.1459)	0.0701 (0.1632)
CSR BIG 4	-0.1595 (0.2038)	-0.1649 (0.3601)
IR * POST	-0.0290 (0.2491)	-0.0088 (0.3230)
IR * CSR BIG 4		0.2159 (0.4566)
POST * CSR BIG 4		-0.1309 (0.3258)
<b>IR * POST * CSR BIG 4</b>		<b>0.0108</b> <b>(0.5153)</b>
LEV	-0.0076*** (0.0012)	-0.0076*** (0.0012)
ISIZE	0.7113*** (0.0953)	0.7056*** (0.0959)
ROA	0.1018*** (0.0177)	0.1017*** (0.0177)
MTB	0.2101*** (0.0430)	0.2088*** (0.0430)
<b>ESG Score</b>	<b>0.0228***</b> <b>(0.0058)</b>	<b>0.0233***</b> <b>(0.0058)</b>
ENFORC	-0.8189 (0.6614)	-0.8488 (0.6620)
TRUST	-0.0205 (0.0161)	-0.0210 (0.0162)
STAKELAW	0.1305* (0.0761)	0.1335* (0.0761)
Constant	1.1826 (2.4772)	1.3139 (2.4807)
Observations	2,259	2,259
R-squared	0.4545	0.4548
Country FE	YES	YES
Industry FE	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 75. IR, cost of debt (credit rating), High and Low Enforcement and Assurance – Sample IIRC

VARIABLES	(1) Rating HENF 1	(2) Rating HENF 2	(3) Rating LENF 3	(4) Rating LENF 4
IR	0.0843 (0.3378)	0.1646 (0.7395)	0.1626 (0.3478)	-0.0978 (0.5398)
POST	0.2543 (0.1603)	0.2720 (0.1978)	-0.0768 (0.2796)	-0.2730 (0.4093)
CSR ASSUR	0.4555** (0.2300)	0.5350* (0.3240)	0.2327 (0.2879)	-0.0845 (0.5528)
<b>IR * POST</b>	<b>-0.1760</b> <b>(0.3032)</b>	<b>-0.0211</b> <b>(0.5224)</b>	<b>0.0473</b> <b>(0.3916)</b>	<b>0.3981</b> <b>(0.6192)</b>
IR * CSR ASSUR		-0.1540 (0.7986)		0.4735 (0.6445)
POST * CSR ASSUR		-0.0716 (0.3226)		0.4101 (0.5421)
<b>IR * POST * CSR ASSUR</b>		<b>-0.1139</b> <b>(0.6143)</b>		<b>-0.6209</b> <b>(0.7840)</b>
LEV	-0.0080*** (0.0013)	-0.0080*** (0.0013)	-0.0068*** (0.0018)	-0.0066*** (0.0018)
ISIZE	0.8787*** (0.1126)	0.8817*** (0.1134)	0.4429*** (0.1358)	0.4408*** (0.1352)
ROA	0.1051*** (0.0182)	0.1049*** (0.0182)	0.0995*** (0.0343)	0.1019*** (0.0342)
MTB	0.2090*** (0.0477)	0.2090*** (0.0478)	0.2237** (0.0912)	0.2179** (0.0911)
<b>ESG Score</b>	<b>0.0298***</b> <b>(0.0067)</b>	<b>0.0294***</b> <b>(0.0068)</b>	<b>-0.0043</b> <b>(0.0089)</b>	<b>-0.0039</b> <b>(0.0090)</b>
ENFORC	-2.0262* (1.0810)	-1.9959* (1.0952)	-1.8657 (1.4723)	-1.7749 (1.4809)
Constant	-1.1675 (3.1733)	-1.2791 (3.2102)	9.3478*** (3.5247)	9.3655*** (3.5212)
Observations	1,364	1,364	1,015	1,015
R-squared	0.5074	0.5075	0.3848	0.3854
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 76. IR, cost of debt (credit rating), High and Low Enforcement and Assurance Big 4 – Sample IIRC

VARIABLES	(1) Rating HENF 1	(2) Rating HENF 2	(3) Rating LENF 3	(4) Rating LENF 4
IR	0.1480 (0.3405)	0.0461 (0.4853)	0.2116 (0.3444)	0.0938 (0.4003)
POST	0.2735* (0.1613)	0.3298* (0.1775)	-0.0501 (0.2791)	-0.0872 (0.3338)
CSR BIG 4	-0.1162 (0.2613)	0.2536 (0.4053)	-0.1934 (0.2686)	-0.3800 (0.5833)
<b>IR * POST</b>	<b>-0.1467</b> <b>(0.2973)</b>	<b>0.0391</b> <b>(0.3795)</b>	<b>0.0206</b> <b>(0.3887)</b>	<b>0.1313</b> <b>(0.4660)</b>
IR * CSR BIG 4		-0.1028 (0.6315)		0.3897 (0.6678)
POST * CSR BIG 4		-0.4954 (0.3627)		0.1553 (0.5686)
<b>IR * POST * CSR BIG 4</b>		<b>0.0955</b> <b>(0.5590)</b>		<b>-0.3487</b> <b>(0.8177)</b>
LEV	-0.0082*** (0.0013)	-0.0082*** (0.0013)	-0.0068*** (0.0018)	-0.0067*** (0.0018)
ISIZE	0.9264*** (0.1145)	0.9194*** (0.1152)	0.4875*** (0.1368)	0.4845*** (0.1367)
ROA	0.1055*** (0.0181)	0.1054*** (0.0180)	0.0993*** (0.0339)	0.1010*** (0.0341)
MTB	0.2113*** (0.0470)	0.2098*** (0.0469)	0.2326** (0.0917)	0.2286** (0.0924)
<b>ESG Score</b>	<b>0.0336***</b> <b>(0.0066)</b>	<b>0.0337***</b> <b>(0.0067)</b>	<b>-0.0016</b> <b>(0.0086)</b>	<b>-0.0013</b> <b>(0.0086)</b>
ENFORC	-1.9979* (1.0959)	-1.8945* (1.1120)	-1.8351 (1.4675)	-1.8421 (1.5285)
Constant	-2.3191 (3.2459)	-2.4226 (3.2584)	8.3677** (3.5281)	8.3739** (3.5652)
Observations	1,364	1,364	1,015	1,015
R-squared	0.5050	0.5057	0.3845	0.3848
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 77. IR, cost of debt (credit rating), High and Low Trust and Assurance – Sample IIRC

VARIABLES	(1) Rating HTRU 1	(2) Rating HTRU 2	(3) Rating LTRU 3	(4) Rating LTRU 4
IR	-0.1262 (0.2886)	0.0619 (0.4103)	0.0901 (0.4124)	-0.4661 (0.8569)
POST	-0.2671 (0.2740)	-0.3091 (0.3940)	0.0825 (0.1668)	0.0213 (0.2121)
CSR ASSUR	0.2991 (0.1987)	0.4687 (0.4465)	0.3012 (0.2781)	0.0863 (0.3645)
<b>IR * POST</b>	<b>0.2335</b> <b>(0.3118)</b>	<b>0.6833</b> <b>(0.5047)</b>	<b>-0.0205</b> <b>(0.3877)</b>	<b>0.1078</b> <b>(0.4765)</b>
IR * CSR ASSUR		-0.3115 (0.5008)		0.7960 (0.9307)
POST * CSR ASSUR		0.0450 (0.4887)		0.1818 (0.3315)
<b>IR * POST * CSR ASSUR</b>		<b>-0.5331</b> <b>(0.6300)</b>		<b>-0.3010</b> <b>(0.6214)</b>
LEV	-0.0100*** (0.0017)	-0.0098*** (0.0017)	-0.0076*** (0.0014)	-0.0075*** (0.0014)
ISIZE	0.8488*** (0.1242)	0.8585*** (0.1248)	0.5988*** (0.1181)	0.5873*** (0.1176)
ROA	0.0989*** (0.0268)	0.0988*** (0.0266)	0.0953*** (0.0231)	0.0959*** (0.0230)
MTB	0.1265* (0.0660)	0.1284** (0.0646)	0.2161*** (0.0520)	0.2148*** (0.0520)
<b>ESG Score</b>	<b>-0.0087</b> <b>(0.0090)</b>	<b>-0.0105</b> <b>(0.0091)</b>	<b>0.0377***</b> <b>(0.0074)</b>	<b>0.0389***</b> <b>(0.0073)</b>
ENFORC	-0.4413 (0.6522)	-0.4272 (0.6533)	-0.7094 (1.1073)	-0.7694 (1.1077)
Constant	-0.1445 (2.9764)	-0.2858 (2.9743)	-0.0058 (3.0833)	0.3854 (3.1093)
Observations	777	777	1,482	1,482
R-squared	0.5556	0.5579	0.3756	0.3766
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 78. IR, cost of debt (credit rating), High and Low Trust and Assurance Big 4 – Sample IIRC

VARIABLES	(1) Rating HTRU 1	(2) Rating HTRU 2	(3) Rating LTRU 3	(4) Rating LTRU 4
IR	-0.0725 (0.2931)	-0.0793 (0.3320)	0.1372 (0.4152)	0.0302 (0.5863)
POST	-0.2375 (0.2766)	-0.2231 (0.3236)	0.0946 (0.1661)	0.0965 (0.1860)
CSR BIG 4	0.0583 (0.2216)	0.0997 (0.4690)	-0.2822 (0.3051)	-0.3248 (0.4561)
IR * POST	0.2216 (0.3135)	0.2305 (0.4062)	-0.0110 (0.3867)	0.0372 (0.5195)
IR * CSR BIG 4		0.0002 (0.5159)		0.2039 (0.7418)
POST * CSR BIG 4		-0.0715 (0.4897)		-0.0155 (0.3885)
<b>IR * POST * CSR BIG 4</b>		<b>0.0129</b> <b>(0.6509)</b>		<b>-0.0782</b> <b>(0.7645)</b>
LEV	-0.0099*** (0.0017)	-0.0099*** (0.0017)	-0.0077*** (0.0014)	-0.0077*** (0.0014)
ISIZE	0.8752*** (0.1248)	0.8742*** (0.1260)	0.6460*** (0.1216)	0.6424*** (0.1220)
ROA	0.0983*** (0.0270)	0.0982*** (0.0272)	0.0959*** (0.0228)	0.0958*** (0.0228)
MTB	0.1230* (0.0668)	0.1227* (0.0679)	0.2201*** (0.0513)	0.2195*** (0.0514)
<b>ESG Score</b>	<b>-0.0064</b> <b>(0.0091)</b>	<b>-0.0064</b> <b>(0.0091)</b>	<b>0.0406***</b> <b>(0.0073)</b>	<b>0.0409***</b> <b>(0.0073)</b>
ENFORC	-0.4675 (0.6622)	-0.4739 (0.6667)	-0.6170 (1.1120)	-0.6478 (1.1103)
Constant	-0.7351 (2.9710)	-0.7154 (2.9778)	-0.9689 (3.1151)	-0.8125 (3.1467)
Observations	777	777	1,482	1,482
R-squared	0.5538	0.5538	0.3752	0.3753
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 79. IR, cost of debt (credit rating), High and Low Stakeholder Orientation and Assurance – Sample IIRC

VARIABLES	(1) Rating HSKL 1	(2) Rating HSKL 2	(3) Rating LSKL 3	(4) Rating LSKL 4
IR	0.1014 (0.4579)	-0.0217 (1.1873)	-0.2647 (0.2910)	-0.3121 (0.4283)
POST	0.0682 (0.3267)	0.1501 (0.5528)	-0.0528 (0.1596)	-0.1060 (0.1937)
CSR ASSUR	0.7027* (0.3916)	0.8377 (0.6335)	0.1985 (0.2117)	0.0986 (0.3571)
<b>IR * POST</b>	<b>0.2041</b> <b>(0.4450)</b>	<b>1.3316</b> <b>(1.1589)</b>	<b>-0.1319</b> <b>(0.3184)</b>	<b>0.1270</b> <b>(0.3506)</b>
IR * CSR ASSUR		0.0332 (1.2118)		0.1399 (0.5335)
POST * CSR ASSUR		-0.1525 (0.5998)		0.1847 (0.3548)
<b>IR * POST * CSR ASSUR</b>		<b>-1.1099</b> <b>(1.2029)</b>		<b>-0.4645</b> <b>(0.5754)</b>
LEV	-0.0070*** (0.0025)	-0.0069*** (0.0025)	-0.0076*** (0.0013)	-0.0076*** (0.0013)
ISIZE	0.6363*** (0.1184)	0.6489*** (0.1247)	0.6944*** (0.1317)	0.6949*** (0.1320)
ROA	0.1214*** (0.0285)	0.1241*** (0.0292)	0.0864*** (0.0220)	0.0863*** (0.0220)
MTB	0.2204*** (0.0767)	0.2141*** (0.0767)	0.2138*** (0.0509)	0.2131*** (0.0511)
<b>ESG Score</b>	<b>0.0141</b> <b>(0.0125)</b>	<b>0.0146</b> <b>(0.0123)</b>	<b>0.0225***</b> <b>(0.0068)</b>	<b>0.0223***</b> <b>(0.0068)</b>
ENFORC	0.0125 (1.2138)	0.0422 (1.2515)	-1.1779 (0.7741)	-1.1761 (0.7857)
Constant	0.7659 (3.1647)	0.2660 (3.2652)	0.3906 (3.0933)	0.4325 (3.1019)
Observations	751	751	1,508	1,508
R-squared	0.4965	0.4977	0.4579	0.4581
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 80. IR, cost of debt (credit rating), High and Low Stakeholder Orientation and Assurance Big 4 – Sample IIRC

VARIABLES	(1) Rating HSKL 1	(2) Rating HSKL 2	(3) Rating LSKL 3	(4) Rating LSKL 4
IR	0.2046 (0.4546)	-0.1212 (0.8051)	-0.2023 (0.2924)	-0.2238 (0.3148)
POST	0.1270 (0.3276)	0.3619 (0.4913)	-0.0363 (0.1585)	-0.0435 (0.1645)
CSR BIG 4	0.2868 (0.2986)	0.6299 (0.5582)	-0.5779** (0.2904)	-0.6710 (0.6699)
<b>IR * POST</b>	<b>0.1636</b> <b>(0.4453)</b>	<b>0.5793</b> <b>(0.7092)</b>	<b>-0.1100</b> <b>(0.3162)</b>	<b>-0.0761</b> <b>(0.3587)</b>
IR * CSR BIG 4		0.3195 (0.8580)		0.1535 (0.7825)
POST * CSR BIG 4		-0.5282 (0.5594)		0.1093 (0.6264)
<b>IR * POST * CSR BIG 4</b>		<b>-0.3320</b> <b>(0.8512)</b>		<b>-0.2027</b> <b>(0.8699)</b>
LEV	-0.0072*** (0.0025)	-0.0073*** (0.0025)	-0.0078*** (0.0013)	-0.0077*** (0.0013)
ISIZE	0.6579*** (0.1201)	0.6496*** (0.1233)	0.7520*** (0.1316)	0.7513*** (0.1322)
ROA	0.1187*** (0.0287)	0.1181*** (0.0291)	0.0887*** (0.0216)	0.0890*** (0.0215)
MTB	0.2230*** (0.0757)	0.2210*** (0.0754)	0.2195*** (0.0503)	0.2192*** (0.0502)
<b>ESG Score</b>	<b>0.0196</b> <b>(0.0120)</b>	<b>0.0200</b> <b>(0.0121)</b>	<b>0.0245***</b> <b>(0.0068)</b>	<b>0.0245***</b> <b>(0.0068)</b>
ENFORC	-0.0659 (1.2252)	-0.3325 (1.2398)	-1.1836 (0.7838)	-1.1830 (0.7849)
Constant	0.2038 (3.2152)	0.6209 (3.2528)	-0.9345 (3.1083)	-0.9181 (3.1244)
Observations	751	751	1,508	1,508
R-squared	0.4930	0.4953	0.4600	0.4601
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## APPENDIX H: RESULTS FOR SAMPLE ALL – COST OF DEBT AND CREDIT RATING

Table 81. IR, cost of debt and High and Low Trust – Sample ALL (H4b)

VARIABLES	(1) Ki Net HTRU 1	(2) Ki Net LTRU 1	(3) Ki Net Q4TRU 1	(4) Ki Net Q1TRU 1
IR	0.0013 (0.0032)	-0.0063* (0.0034)	-0.0020 (0.0043)	-0.0015 (0.0040)
POST	-0.0017 (0.0018)	-0.0059*** (0.0016)	-0.0014 (0.0024)	-0.0018 (0.0022)
<b>IR * POST</b>	<b>-0.0027</b> <b>(0.0033)</b>	<b>0.0025</b> <b>(0.0037)</b>	<b>0.0000</b> <b>(0.0041)</b>	<b>-0.0007</b> <b>(0.0038)</b>
LEV	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0000* (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0054*** (0.0011)	-0.0026** (0.0013)	-0.0062*** (0.0013)	-0.0014 (0.0012)
ROA	0.0004** (0.0002)	0.0003 (0.0002)	0.0004* (0.0002)	0.0003 (0.0003)
MTB	0.0002 (0.0011)	0.0008 (0.0007)	0.0008 (0.0013)	0.0018 (0.0012)
<b>ESG Score</b>	<b>0.0001</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>0.0001</b> <b>(0.0001)</b>
ENFORC	-0.0182** (0.0077)	-0.0109 (0.0085)	-0.0236** (0.0107)	-0.0197** (0.0091)
Constant	0.2024*** (0.0297)	0.1557*** (0.0392)	0.2327*** (0.0365)	0.0842*** (0.0304)
Observations	2,686	4,477	1,842	1,288
R-squared	0.2617	0.1253	0.1581	0.2577
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 82. IR, cost of debt (credit rating) and Trust – Sample ALL (H4b)

VARIABLES	(1) Rating TRU2	(2) Rating TRU2	(3) Rating TRU2	(4) Rating TRU2
IR	1.1099 (0.8253)	1.4294* (0.8299)	0.5495 (0.9746)	0.5539 (0.9743)
POST	-0.6737 (0.5049)	-0.0296 (0.5796)	-0.2209 (0.6683)	-0.1870 (0.6646)
TRUST	0.0373 (0.0311)	0.0232 (0.0223)	-0.0020 (0.0232)	0.0024 (0.0175)
IR * POST	0.5680 (0.7880)	-0.3384 (0.8339)	0.4746 (0.9441)	0.4677 (0.9440)
IR * TRUST	0.0014 (0.0108)	-0.0131 (0.0106)	-0.0048 (0.0126)	-0.0049 (0.0126)
POST * TRUST	0.0122* (0.0065)	0.0019 (0.0074)	0.0049 (0.0086)	0.0043 (0.0085)
<b>IR * POST * TRUST</b>	<b>-0.0102</b> <b>(0.0100)</b>	<b>0.0021</b> <b>(0.0105)</b>	<b>-0.0063</b> <b>(0.0118)</b>	<b>-0.0061</b> <b>(0.0118)</b>
LEV		-0.0100*** (0.0008)	-0.0091*** (0.0010)	-0.0091*** (0.0010)
ISIZE		0.8234*** (0.0543)	0.6858*** (0.0729)	0.6852*** (0.0730)
ROA		0.1082*** (0.0145)	0.1030*** (0.0148)	0.1030*** (0.0149)
MTB		0.3046*** (0.0392)	0.2386*** (0.0444)	0.2387*** (0.0444)
<b>ESG Score</b>			<b>0.0168***</b> <b>(0.0043)</b>	<b>0.0168***</b> <b>(0.0043)</b>
ENFORC				0.2802 (0.5059)
STAKELAW				-0.0174 (0.0656)
Constant	12.8541*** (2.5604)	-3.8787* (2.1943)	1.0868 (2.5470)	0.4598 (2.1576)
Observations	7,645	7,533	4,276	4,263
R-squared	0.2472	0.4244	0.4121	0.4113
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 83. IR, cost of debt (credit rating) and High and Low Trust – Sample ALL (H4b)

VARIABLES	(1) Rating HTRU 1	(2) Rating LTRU 1	(3) Rating Q4TRU 1	(4) Rating Q1TRU 1
IR	-0.0637 (0.2496)	0.4041 (0.3369)	0.3553 (0.4609)	0.3811 (0.5604)
POST	-0.1037 (0.1793)	0.2825** (0.1365)	0.4524 (0.3179)	0.1117 (0.3679)
<b>IR * POST</b>	<b>0.0730</b> <b>(0.2407)</b>	<b>0.0872</b> <b>(0.3144)</b>	<b>-0.3646</b> <b>(0.4216)</b>	<b>0.4670</b> <b>(0.5887)</b>
LEV	-0.0126*** (0.0016)	-0.0083*** (0.0012)	-0.0165*** (0.0024)	-0.0072*** (0.0031)
ISIZE	1.0353*** (0.1173)	0.5699*** (0.0896)	1.2855*** (0.1597)	0.3661** (0.1447)
ROA	0.0681*** (0.0228)	0.1185*** (0.0178)	0.0600** (0.0251)	0.1059** (0.0459)
MTB	0.2357*** (0.0761)	0.2204*** (0.0484)	0.3472*** (0.1001)	0.2908* (0.1526)
<b>ESG Score</b>	<b>-0.0096</b> <b>(0.0064)</b>	<b>0.0288***</b> <b>(0.0058)</b>	<b>-0.0020</b> <b>(0.0115)</b>	<b>0.0171</b> <b>(0.0139)</b>
ENFORC	-0.4835 (0.5007)	1.8134* (0.9349)	-1.0246 (1.0742)	1.6783 (1.7665)
Constant	-4.2643* (2.5791)	0.1405 (2.8126)	-9.9320** (4.0359)	9.9516*** (3.3614)
Observations	1,507	2,769	793	826
R-squared	0.5572	0.3298	0.5265	0.2704
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 84. IR, cost of debt and High and Low Stakeholder Orientation – Sample ALL (H5b)

VARIABLES	(1) Ki Net HSKL 1	(2) Ki Net LSKL 1	(3) Ki Net Q4SKL 1	(4) Ki Net Q1SKL 1
IR	-0.0020 (0.0032)	-0.0013 (0.0034)	-0.0051 (0.0044)	0.0052 (0.0065)
POST	-0.0031* (0.0018)	-0.0056*** (0.0016)	-0.0065** (0.0030)	-0.0073*** (0.0020)
<b>IR * POST</b>	<b>0.0004</b> <b>(0.0031)</b>	<b>-0.0013</b> <b>(0.0042)</b>	<b>0.0043</b> <b>(0.0038)</b>	<b>-0.0049</b> <b>(0.0052)</b>
LEV	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0001*** (0.0000)	-0.0000 (0.0000)
ISIZE	-0.0036*** (0.0011)	-0.0037** (0.0015)	-0.0034 (0.0022)	-0.0030 (0.0022)
ROA	0.0003 (0.0002)	0.0005** (0.0002)	0.0001 (0.0003)	0.0001 (0.0002)
MTB	0.0007 (0.0009)	0.0006 (0.0008)	0.0014 (0.0011)	0.0004 (0.0007)
<b>ESG Score</b>	<b>-0.0001</b> <b>(0.0001)</b>	<b>0.0000</b> <b>(0.0001)</b>	<b>-0.0001</b> <b>(0.0003)</b>	<b>-0.0000</b> <b>(0.0001)</b>
ENFORC	-0.0111* (0.0067)	-0.0149* (0.0087)	-0.0111 (0.0114)	-0.0348* (0.0179)
Constant	0.1640*** (0.0250)	0.1590*** (0.0319)	0.1785*** (0.0546)	0.1640*** (0.0552)
Observations	3,143	4,001	1,764	2,249
R-squared	0.1686	0.1922	0.2007	0.1087
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 85. IR, cost of debt (credit rating) and Stakeholder Orientation – Sample ALL (H5b)

VARIABLES	(1) Rating SKL2	(2) Rating SKL2	(3) Rating SKL2	(4) Rating SKL2
IR	0.3709 (0.6483)	0.3133 (0.6258)	-0.1853 (0.6661)	-0.1887 (0.6657)
POST	0.1497 (0.2940)	0.3930 (0.2619)	0.2441 (0.3057)	0.2337 (0.3055)
IR * POST	-0.3114 (0.6694)	-1.0971* (0.6521)	-0.5310 (0.6533)	-0.5302 (0.6532)
STAKELAW	0.0939 (0.0743)	0.0509 (0.0527)	-0.0082 (0.0552)	-0.0148 (0.0686)
IR * STAKELAW	0.0615 (0.0425)	0.0155 (0.0394)	0.0265 (0.0417)	0.0262 (0.0417)
POST * STAKELAW	0.0053 (0.0220)	-0.0223 (0.0193)	-0.0087 (0.0229)	-0.0089 (0.0229)
<b>IR * POST * STAKELAW</b>	<b>0.0064</b> <b>(0.0421)</b>	<b>0.0622</b> <b>(0.0406)</b>	<b>0.0363</b> <b>(0.0402)</b>	<b>0.0369</b> <b>(0.0404)</b>
LEV		-0.0100*** (0.0008)	-0.0090*** (0.0010)	-0.0090*** (0.0010)
ISIZE		0.8184*** (0.0542)	0.6801*** (0.0734)	0.6800*** (0.0734)
ROA		0.1080*** (0.0145)	0.1026*** (0.0149)	0.1027*** (0.0149)
MTB		0.3091*** (0.0394)	0.2365*** (0.0444)	0.2362*** (0.0444)
ESG Score			0.0175*** (0.0044)	0.0175*** (0.0044)
ENFORC				0.4142 (0.5509)
TRUST				-0.0021 (0.0160)
Constant	15.0262*** (0.9554)	-2.3792* (1.4111)	1.1651 (1.8252)	0.7315 (2.1526)
Observations	7,597	7,487	4,263	4,263
R-squared	0.2463	0.4238	0.4114	0.4115
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 86. IR, cost of debt (credit rating) and High and Low Stakeholder Orientation – Sample ALL (H5b)

VARIABLES	(1) Rating HSKL 1	(2) Rating LSKL 1	(3) Rating Q4SKL 1	(4) Rating Q1SKL 1
IR	0.3908 (0.3390)	0.0388 (0.2724)	0.4295 (0.3900)	-0.0827 (0.7367)
POST	0.1875 (0.2218)	0.0753 (0.1330)	0.1046 (0.2841)	0.3865*** (0.1450)
<b>IR * POST</b>	<b>0.0231</b> <b>(0.3217)</b>	<b>-0.0971</b> <b>(0.2714)</b>	<b>0.2120</b> <b>(0.3649)</b>	<b>-0.7584</b> <b>(0.7069)</b>
LEV	-0.0085*** (0.0019)	-0.0092*** (0.0012)	-0.0056*** (0.0020)	-0.0105*** (0.0014)
ISIZE	0.7734*** (0.0968)	0.6133*** (0.1055)	0.9281*** (0.1387)	0.7062*** (0.1268)
ROA	0.1061*** (0.0262)	0.0964*** (0.0178)	0.1284*** (0.0481)	0.0961*** (0.0205)
MTB	0.2945*** (0.0870)	0.2260*** (0.0494)	0.2870*** (0.1080)	0.2570*** (0.0516)
<b>ESG Score</b>	<b>0.0093</b> <b>(0.0073)</b>	<b>0.0212***</b> <b>(0.0053)</b>	<b>0.0099</b> <b>(0.0113)</b>	<b>0.0256***</b> <b>(0.0065)</b>
ENFORC	0.8997 (0.9246)	0.0313 (0.6518)	-0.4100 (0.9960)	4.1576** (1.7583)
Constant	-2.7103 (2.6400)	3.9874 (2.5440)	-3.5335 (3.7961)	-1.3304 (3.3948)
Observations	1,607	2,656	942	1,497
R-squared	0.4201	0.4175	0.4782	0.3911
Country FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 87. IR, cost of debt, institutional factors and Assurance – Sample ALL

VARIABLES	(1)	(3)	(1)	(3)	(1)	(3)
	Ki Net HENF 1	Ki Net LENF 3	Ki Net HTRU 1	Ki Net LTRU 3	Ki Net HSKL 1	Ki Net LSKL 3
IR	-0.0050 (0.0031)	0.0019 (0.0027)	0.0016 (0.0032)	-0.0062* (0.0034)	-0.0018 (0.0031)	-0.0010 (0.0035)
POST	-0.0060*** (0.0016)	-0.0021 (0.0015)	-0.0015 (0.0018)	-0.0058*** (0.0016)	-0.0030 (0.0018)	-0.0055*** (0.0016)
CSR ASSUR	-0.0019 (0.0024)	-0.0026 (0.0025)	-0.0034 (0.0026)	-0.0009 (0.0025)	-0.0016 (0.0028)	-0.0022 (0.0024)
<b>IR * POST</b>	<b>0.0030</b> <b>(0.0032)</b>	<b>-0.0045</b> <b>(0.0031)</b>	<b>-0.0027</b> <b>(0.0033)</b>	<b>0.0025</b> <b>(0.0037)</b>	<b>0.0004</b> <b>(0.0031)</b>	<b>-0.0013</b> <b>(0.0042)</b>
LEV	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000** (0.0000)
ISIZE	-0.0044*** (0.0013)	-0.0012 (0.0009)	-0.0052*** (0.0011)	-0.0025** (0.0013)	-0.0035*** (0.0011)	-0.0035** (0.0015)
ROA	0.0003* (0.0002)	0.0003* (0.0002)	0.0004** (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0005** (0.0002)
MTB	0.0009 (0.0007)	0.0002 (0.0008)	0.0002 (0.0011)	0.0008 (0.0007)	0.0006 (0.0009)	0.0006 (0.0008)
ESG Score	-0.0000 (0.0001)	0.0001 (0.0001)	0.0001* (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)
ENFORC	-0.0097 (0.0083)	-0.0142 (0.0087)	-0.0180** (0.0077)	-0.0111 (0.0086)	-0.0113* (0.0067)	-0.0149* (0.0087)
Constant	0.1817*** (0.0307)	0.0771*** (0.0240)	0.1956*** (0.0299)	0.1549*** (0.0393)	0.1618*** (0.0257)	0.1555*** (0.0320)
Observations	5,015	2,520	2,686	4,477	3,143	4,001
R-squared	0.1265	0.3233	0.2630	0.1254	0.1688	0.1926
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 88. IR, cost of debt, institutional factors and Assurance Big 4 – Sample ALL

VARIABLES	(1)	(3)	(1)	(3)	(1)	(3)
	Ki Net HENF 1	Ki Net LENF 3	Ki Net HTRU 1	Ki Net LTRU 3	Ki Net HSKL 1	Ki Net LSKL 3
IR	-0.0053* (0.0031)	0.0017 (0.0027)	0.0013 (0.0032)	-0.0061* (0.0034)	-0.0024 (0.0032)	-0.0010 (0.0034)
POST	-0.0061*** (0.0016)	-0.0023 (0.0015)	-0.0017 (0.0018)	-0.0058*** (0.0016)	-0.0033* (0.0018)	-0.0055*** (0.0016)
CSR BIG 4	0.0003 (0.0029)	-0.0007 (0.0023)	0.0001 (0.0028)	-0.0019 (0.0029)	0.0026 (0.0025)	-0.0039 (0.0032)
<b>IR * POST</b>	<b>0.0029</b> <b>(0.0032)</b>	<b>-0.0044</b> <b>(0.0031)</b>	<b>-0.0027</b> <b>(0.0033)</b>	<b>0.0025</b> <b>(0.0037)</b>	<b>0.0003</b> <b>(0.0031)</b>	<b>-0.0012</b> <b>(0.0042)</b>
LEV	-0.0001*** (0.0000)	-0.0000** (0.0000)	-0.0000 (0.0000)	-0.0001*** (0.0000)	-0.0001*** (0.0000)	-0.0000** (0.0000)
LSIZE	-0.0046*** (0.0013)	-0.0013 (0.0009)	-0.0054*** (0.0011)	-0.0025* (0.0013)	-0.0038*** (0.0011)	-0.0035** (0.0015)
ROA	0.0003* (0.0002)	0.0003* (0.0002)	0.0004** (0.0002)	0.0003 (0.0002)	0.0003 (0.0002)	0.0004** (0.0002)
MTB	0.0009 (0.0007)	0.0002 (0.0008)	0.0002 (0.0011)	0.0008 (0.0007)	0.0007 (0.0009)	0.0006 (0.0008)
ESG Score	-0.0000 (0.0001)	0.0000 (0.0001)	0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0001)	0.0000 (0.0001)
ENFORC	-0.0098 (0.0084)	-0.0140 (0.0087)	-0.0182** (0.0077)	-0.0111 (0.0085)	-0.0109 (0.0067)	-0.0148* (0.0087)
Constant	0.1860*** (0.0314)	0.0782*** (0.0240)	0.2025*** (0.0302)	0.1544*** (0.0398)	0.1674*** (0.0260)	0.1549*** (0.0318)
Observations	5,015	2,520	2,686	4,477	3,143	4,001
R-squared	0.1263	0.3224	0.2617	0.1255	0.1692	0.1928
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 89. IR, cost of debt (credit rating), Institutional factors and Assurance – Sample ALL

VARIABLES	(1) Rating HENF 1	(2) Rating LENF 3	(3) Rating HTRU 1	(4) Rating LTRU 3	(5) Rating HSKL 1	(6) Rating LSKL 3
IR	0.1423 (0.2850)	0.3140 (0.2841)	-0.0795 (0.2501)	0.3779 (0.3365)	0.3433 (0.3410)	0.0054 (0.2736)
POST	0.3393*** (0.1227)	-0.0509 (0.2169)	-0.1128 (0.1796)	0.2562* (0.1359)	0.1539 (0.2223)	0.0577 (0.1326)
<b>CSR ASSUR</b>	<b>0.3311**</b> <b>(0.1633)</b>	<b>0.2354</b> <b>(0.2497)</b>	<b>0.1529</b> <b>(0.1587)</b>	<b>0.5443**</b> <b>(0.2166)</b>	<b>0.4364*</b> <b>(0.2527)</b>	<b>0.3977**</b> <b>(0.1729)</b>
IR * POST	-0.0126 (0.2528)	0.1135 (0.3197)	0.0790 (0.2410)	0.0775 (0.3129)	0.0364 (0.3219)	-0.0851 (0.2715)
LEV	-0.0104*** (0.0011)	-0.0057*** (0.0019)	-0.0125*** (0.0016)	-0.0082*** (0.0012)	-0.0085*** (0.0019)	-0.0091*** (0.0012)
ISIZE	0.8778*** (0.0848)	0.3157** (0.1244)	1.0259*** (0.1183)	0.5387*** (0.0889)	0.7536*** (0.0965)	0.5859*** (0.1052)
ROA	0.1035*** (0.0164)	0.1014*** (0.0301)	0.0677*** (0.0228)	0.1174*** (0.0178)	0.1056*** (0.0262)	0.0952*** (0.0178)
MTB	0.2474*** (0.0480)	0.1394 (0.1053)	0.2383*** (0.0760)	0.2201*** (0.0485)	0.2996*** (0.0868)	0.2268*** (0.0493)
<b>ESG Score</b>	<b>0.0148***</b> <b>(0.0053)</b>	<b>0.0048</b> <b>(0.0083)</b>	<b>-0.0113*</b> <b>(0.0066)</b>	<b>0.0236***</b> <b>(0.0060)</b>	<b>0.0040</b> <b>(0.0081)</b>	<b>0.0177***</b> <b>(0.0054)</b>
ENFORC	1.3697** (0.6940)	0.0797 (1.0782)	-0.4859 (0.4975)	1.8461** (0.9334)	0.9808 (0.9150)	0.0139 (0.6494)
Constant	-6.3947*** (2.2424)	11.7685*** (3.0700)	-4.0334 (2.6128)	0.6010 (2.7904)	-2.3112 (2.6216)	4.5725* (2.5332)
Observations	2,765	1,752	1,507	2,769	1,607	2,656
R-squared	0.4526	0.3190	0.5577	0.3331	0.4221	0.4197
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 90. IR, cost of debt (credit rating), Institutional factors and Assurance Big 4 – Sample ALL

VARIABLES	(1) Rating HENF 1	(2) Rating LENF 3	(3) Rating HTRU 1	(4) Rating LTRU 3	(5) Rating HSKL 1	(6) Rating LSKL 3
IR	0.1474 (0.2867)	0.3439 (0.2814)	-0.0603 (0.2513)	0.3821 (0.3410)	0.3735 (0.3425)	0.0400 (0.2762)
POST	0.3482*** (0.1234)	-0.0291 (0.2162)	-0.1017 (0.1799)	0.2755** (0.1364)	0.1776 (0.2217)	0.0755 (0.1330)
CSR BIG 4	0.1709 (0.1942)	-0.1564 (0.2345)	-0.0434 (0.1880)	0.2624 (0.2499)	0.1830 (0.2166)	-0.0131 (0.2678)
IR * POST	-0.0173 (0.2505)	0.0960 (0.3165)	0.0745 (0.2412)	0.0877 (0.3142)	0.0227 (0.3220)	-0.0971 (0.2714)
LEV	-0.0105*** (0.0011)	-0.0057*** (0.0019)	-0.0126*** (0.0016)	-0.0083*** (0.0012)	-0.0085*** (0.0019)	-0.0092*** (0.0012)
ISIZE	0.8933*** (0.0870)	0.3329*** (0.1253)	1.0380*** (0.1197)	0.5592*** (0.0903)	0.7643*** (0.0990)	0.6139*** (0.1052)
ROA	0.1038*** (0.0164)	0.1021*** (0.0299)	0.0680*** (0.0229)	0.1185*** (0.0179)	0.1062*** (0.0263)	0.0964*** (0.0177)
MTB	0.2476*** (0.0481)	0.1382 (0.1052)	0.2357*** (0.0762)	0.2196*** (0.0484)	0.2973*** (0.0866)	0.2261*** (0.0493)
ESG Score	0.0172*** (0.0051)	0.0084 (0.0079)	-0.0094 (0.0063)	0.0280*** (0.0058)	0.0077 (0.0076)	0.0212*** (0.0053)
ENFORC	1.3283* (0.7040)	0.0773 (1.0768)	-0.4840 (0.5012)	1.8006* (0.9380)	0.8995 (0.9257)	0.0322 (0.6544)
Constant	-6.6996*** (2.2962)	11.4216*** (3.0989)	-4.3207 (2.6229)	0.3483 (2.8401)	-2.4731 (2.6865)	3.9735 (2.5467)
Observations	2,765	1,752	1,507	2,769	1,607	2,656
R-squared	0.4515	0.3186	0.5573	0.3304	0.4206	0.4175
Country FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES

Note: Standard errors are robust and clustered at the firm level, in parentheses.  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## APPENDIX I: COST OF EQUITY – EX ANTE MODELS

Here we present alternative methods of measuring the cost of equity to be used in a possible extension of this research. The most recent studies use an ex ante approach, in which the cost of capital is estimated using return forecasts. In this way, investors' perceptions about expected future cash flows and forecasts about the company's performance are incorporated. In essence, stock pricing equations are used to inform the current stock price and analysts' forecasts, factors that can be used to obtain the cost of equity representing an internal rate of return that proposes equality between stock price and a sequence of future expectations of residual or abnormal profits.

### Claus and Thomas (2001) Model

Expected residual profit is calculated from the combination of shareholders' equity per share and profit forecast. The series of expected residual profits is obtained through the expectation of earnings per share for a five-year time horizon reduced by the cost of capital multiplied by the amount of equity for the current period. It is assumed that earnings per share increase the long-term growth rate ( $g$ ) (Claus & Thomas, 2001).

The following equation demonstrates it:

$$P_t = Eq_t + \sum_{\tau=1}^T \frac{(\hat{x}_{t+\tau} - CEC_{CT} \cdot EQ_{t+\tau-1})}{(1 + CEC_{CT})^\tau} + \frac{(\hat{x}_{t+\tau} - CEC_{CT} \cdot EQ_{t+\tau-1}) \cdot (1 + g)}{(CEC_{CT} - g)^\tau \cdot (1 + CEC_{CT})^T}$$

Where:

$P_t$  = share price in year  $t$

$Eq_t$  = equity for the period

$\hat{x}$  = projection of earnings per share for five years

$g$  = expected long-term growth in year  $t$

$CEC_{CT}$  = cost of equity according to Claus and Thomas (2001)

The model assumes clean surplus accounting, which, in turn, assumes that the future value of equity results of changes in projected profits and dividends (Claus & Thomas, 2001).

### Gebhardt, Lee and Swaminathan (2001) Model

Like the Claus and Thomas (2001), this model also assumes clean surplus accounting and expresses the share price as the combination of the equity value per share and Return on Equity. It differs, however, in relation to the time horizon. In the first three periods, the projection of earnings per share is used; for subsequent periods, the average return on equity for the industry is used, and from period 12 and beyond, it is assumed that the growth is constant (Gebhardt et al., 2001). The model is determined by the following formula:

$$P_t = PL_t + \sum_{\tau=1}^T \frac{(\hat{x}_{t+\tau} - CCP_{GLES} \cdot PL_{t+\tau-1})}{(1 + CCP_{GLES})^\tau} + \frac{(\hat{x}_{t+T} - CCP_{GLES} \cdot PL_{t+T})}{r_{GLES} \cdot (1 + CCP_{GLES})^T}$$

### Ohlson and Juettner-Nauroth (2005) Model

This is an abnormal profit growth model, which assumes that the share price can be obtained by forecasting earnings per share for one year, with the following periods showing increasing value when considering medium and long-term growth rates (Ohlson & Juettner-Nauroth, 2005). This is shown in the following formula:

$$P_t = \frac{\left(\frac{\hat{x}_{t+1}}{CCP_{OJ}}\right) \cdot \left(g_{lp} + CCP_{OJ} \cdot \frac{\hat{d}_{t+1}}{\hat{x}_{t+1}} - g_{lp}\right)}{(CCP_{OJ} - g_{lp})}$$

The model assumes that the value of the company is equivalent to the sum of its present expected dividend value, and that both profit forecast and expected growth are positive.

### Easton (2004) Model

The model devised by Easton (2004) is a variation on the Ohlson and Juettner-Nauroth (2005) model. The share price is defined by the projection of earnings per share and dividends per share for the subsequent year, which are used for estimating a measure of abnormal profit growth.

$$P_t = \frac{(\hat{x}_{t+2} + CCP_{PEG} \cdot \hat{d}_{t+1} - \hat{x}_{t+1})}{CCP_{PEG}^2}$$

Botosan (2006) emphasizes that the ex ante approach is also criticized for its operationalization, and there is no consensus as to the best model for the estimation.