The Price of Taste for Socially Responsible Investments

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Road Map

1. Introduction
2. Literature Review
3. Data and Descriptive
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CSR in Numbers

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- CSR reporting is a standard practice for large and mid-cap companies around the world. Specifically, three quarters of the 4900 analyzed companies issue a CSR report;
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- CSR reporting is a mainstream global business practice with almost 71% of the analyzed companies publish a CSR report. An increase of 7% points if compared with 64% of companies in KPMG (2011) report;
- the strongest increments in registered in the Asia Pacific are where the number of companies issuing CSR report increase from 49% in the KPMG (2011) report to the 71% KPMG (2013) one.

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The Global Sustainable Investment Alliance (2016) reports:

- worldwide the asset under management subject to SRI strategies amount to $22.89 trillion in 2016 compared with $18.28 trillion in 2014. This corresponds to an increase of 25%;
- in Europe the SRI corresponds to one dollar over two;
- the largest sustainable investment strategy globally is negative/exclusionary screening ($15.02 trillion).

Motivations

Responsible investors, do not evaluate stocks only on the base of their risk/return prospect

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Responsible investor should select stocks according to their ESG levels (taste effect).

CSR embraces a wide range of Enviromental (E) Social (S) and Governance (G) (ESG) principles.

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Risk-adjusted are divided into the taste and idiosyncratic risk component

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- ... we look at the slope coefficient of our SRI scores in the cross-sectional regressions to quantify the price of taste.

Research Questions & Hypothesis Test

Therefore we can formulate the following research question:

$H_{A,0}$

The CSR Quintile portfolios does not present risk-adjusted returns.

As showed by Becchetti, Ciciretti, and Dalò (2018), if we reject $H_{A,0}$, meaning that there exist a risk-adjusted even after controlling for the stakeholder risk exposition, the investor preference can be an important component behind them.

In order to check such conjecture, we isolate the contribution of taste effect with respect to the idiosyncratic effect in generating such a risk-adjusted returns, testing the following null hypothesis:

$H_{B,0}$

Does not exist a price of taste for social responsible investors.

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- Becchetti, Ciciretti, and Dalò (2018) introduce domain-specific CSR risk factors on the basis of firm's responsibility level, in order to capture the CSR risk-adjusted returns. Even if, the CSR risk factor are able to correctly most of them, they are not able to price firms with higher responsibility levels.

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We contribute to the asset pricing literature applied to dissect the investor preferences with respect to SRI in the following directions:

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3. in doing so we are being particularly cautious in disentangling the contribution of investors preferences in generating the risk-adjusted returns by controlling also for the idiosyncratic risk component.

Data Sources

- Time Horizon: monthly observations from 06/2005 to 04/2014 (108 points in time);
- Firm-Month Observations: $107,185$;
- Unique Firms: $1,000$;
- CSR ▸ score at firm level: VIGEO-Eiris.

  The Overall (OA) CSR score is a weighted combinations of the following six ▸ domains: Business Behavior (BB); Corporate Governance (CG); Community Involvement (CIN); Environment (ENV); Human Resources (HR); Human Rights (HRT).

- Other firm-level fundamental characteristics: Thomson-Reuters.

  Price Series; Market Value of Equity; Common Equity; Total Assets; Net Sales or Revenues; Selling General, and Administrative Expenses; Interest Expense on Debt; and Cost of Goods Sold. These variables are used to create the size (ME), book-to-market (BE/ME), investment (Inv), and operating profitability (OP) dimensions following the Fama and French (2015) procedures.

- Risk factors at market-level: Fama-French Website (Fama and French, 2012, 2017).

  Market Benchmark ($R_{mt} - R_{ft}$); Small minus Big (SMB_t); High minus Low (HML_t); Momentum (MoM_t); Robust minus Weak (RMW_t); Conservative minus Aggressive (CMA_t).

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- IV_p is the idiosyncratic risk at portfolio level (Idiosyncratic Component – λ_{IV}).

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The expected value of model (1) is equal to model (2)

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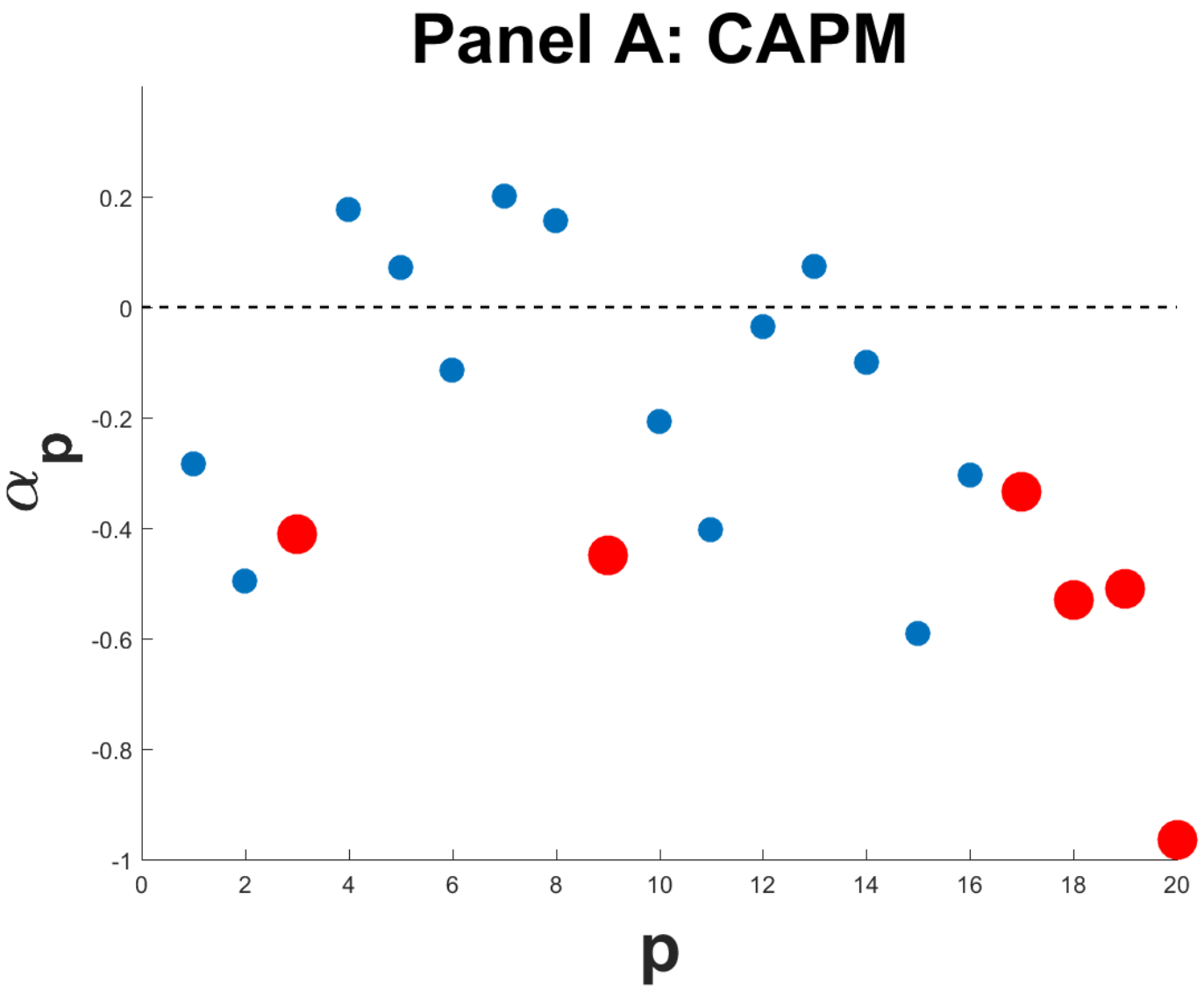
is now possible to verify there exist a taste effect ($\lambda_S \neq 0$) with respect to the idiosyncratic effect ($\lambda_{IV} \neq 0$) in generating the still significant risk-adjusted returns.

Timeseries Regression - CSR Quintiles Portfolios Level, Model (1)



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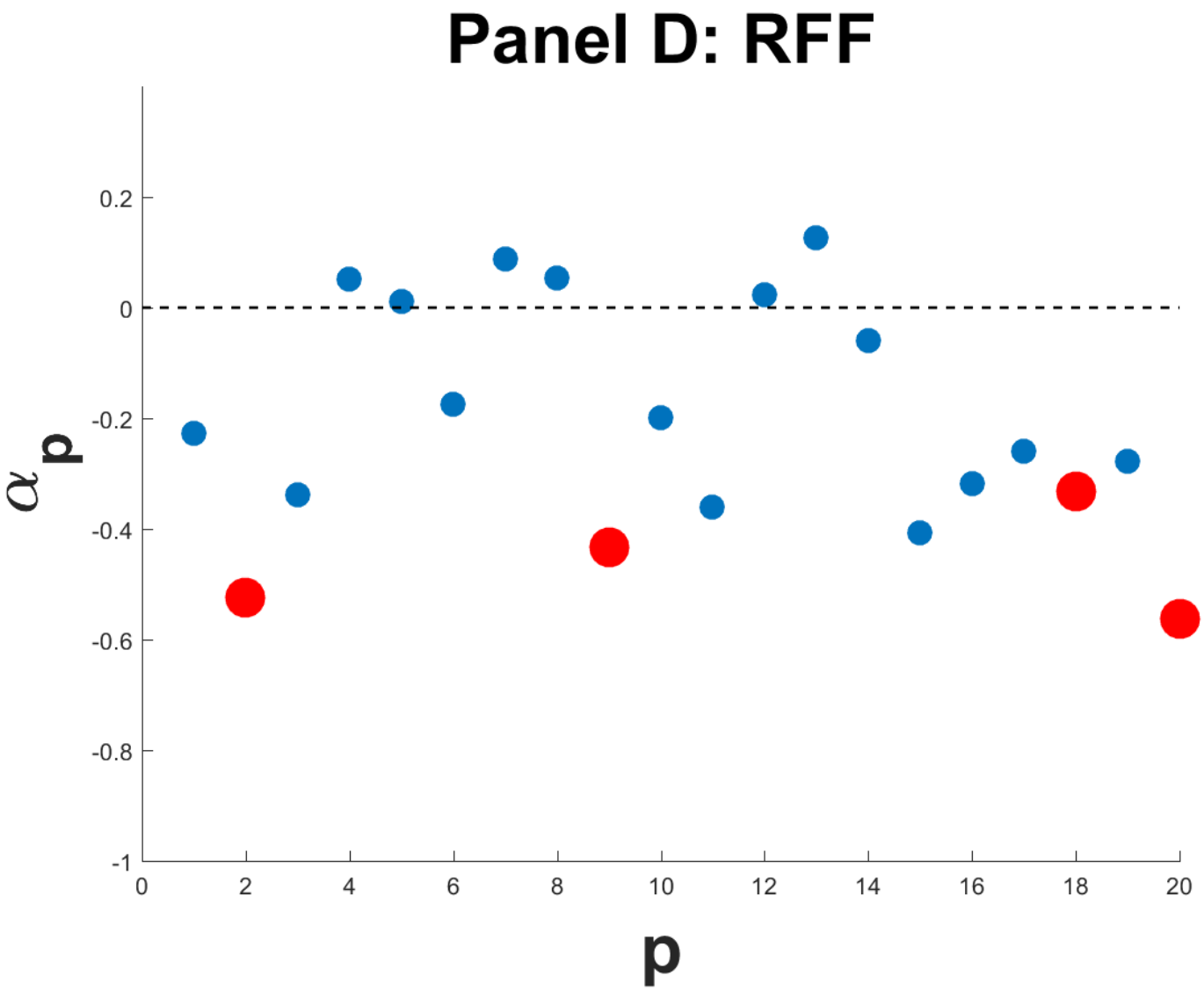

Cross-Sectional Regression - CSR Quintiles Portfolios Level, Model (2)

	(1)	(2)	(3)	(4)
	OA/CAPM	*OA/FF3*	*OA/FF4*	*OA/RFF*
λ_0	0.02***	2.63***	2.36***	2.06***
$\tau[\lambda_0]$	[35.93]	[36.71]	[25.35]	[21.02]
λ_S	**0.00*** **	**-0.02*** **	**-0.02*** **	**-0.01*** **
$\tau[\lambda_S]$	[-13.52]	[-13.02]	[-13.57]	[-7.41]
λ_{mk}	-0.01***	-0.97***	-0.78***	-0.70***
$\tau[\lambda_{mk}]$	[-15.84]	[-14.39]	[-10.41]	[-9.69]
λ_s		-0.19***	-0.20***	-0.16***
$\tau[\hat{\lambda}_s]$		[-4.85]	[-5.03]	[-3.89]
λ_h		0.09***	0.14***	0.13***
$\tau[\lambda_h]$		[3.20]	[4.81]	[4.38]
λ_m			0.33***	0.43***
$\tau[\lambda_m]$			[5.71]	[7.18]
λ_w				0.05**
$\tau[\lambda_w]$				[2.01]
λ_{IV}	-0.07***	-5.63***	-1.95	-4.27***
$\tau[\lambda_{IV}]$	[-5.00]	[-3.91]	[-1.26]	[-2.75]
R^2	0.28	0.39	0.45	0.51

According to equation (3), $\bar{\hat{\lambda}}_{\mathrm{OA}}$ identifies the relation between **investors preferences** ($\bar{S}_p$) and the **risk-adjusted returns** (α_p). To quantify such relation, consider that by **increasing**(**decreasing**) the average responsibility level of a portfolio ($\bar{S}_p = \mathbf{41.49}$) of one standard deviation (**8.08**), the portion of average return due to its risk-adjusted returns (α_p) **decreases**(**increases**) about **0.42**%.

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According to equation (3), $\bar{\hat{\lambda}}_{\mathbf{IV}}$ identifies the relation between **idiosyncratic risk** ($\overline{\mathbf{IV}}_{\mathbf{p}}$) and the **risk-adjusted returns** ($\alpha_{\mathbf{p}}$). To quantify such relation, consider that by **increasing**(**decreasing**) the average idiosyncratic risk of a portfolio ($\mathbf{IV}_{\mathbf{p}} = \mathbf{0.09}$) about one standard deviation (**0.03**) the portion of average return due to its risk-adjusted returns ($\alpha_{\mathbf{p}}$) **decreases**(**increases**) about **0.43**%.

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- using as robustness check the in-sample Fama and French (2017, 2012) and Carhart (1997) risk factors.

Conclusions

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The reasons behind such large number could be:

i) particular sample/period under analysis;

ii) we are describing an "in equilibrium" situation while in fact the "market for SRI" is growing.

Single Domain Score and Over-All Score

The responsibility measure for firm i within industry j in the dimension d is denoted as $-S_{ijd}-$. It is computed as follows:

$$S_{ijd} = \sum_{c=1}^{C} \frac{s_{ijdc} w_{jdc}}{W_{jd}} \tag{1}$$

where s_{ijdc} is the responsibility measure assigned to firm i within industry j in the dimension d and category c which takes an integer value between 0 and 100, w_{jdc} is the weight assigned to industry j in the dimension d and category c which takes an integer value between 1 and 3, W_{jd} is the sum of all the categories' weights activated in the dimension $\left(W_{jd} = \sum_{c=1}^{C} w_{jdc}\right)$. Dimension specific responsibility measure $-S_{ijd}-$ are used to compute the Over All responsibility measure $-OA_{ij}-$ for firm i within industry j defined as follow:

$$OA_{ij} = \sum_{d=1}^{D} \frac{S_{ijd} W_{jd}}{W_j} \tag{2}$$

Back

Domains Definition/Category

- **Business Behavior**. **Product safety**: corporate attention to product safety issues into account, and the related steps taken to prevent and repair emergency / crisis situation affecting product safety. **Information customers**: definition and implementation of principles of conduct and measures to prevent negative impact of marketing practices on financial, moral and ethical issues as well as on the health and safety of users and / or customers. **Responsible contractual agreement**: corporate commitment to include guarantees in its contractual relation which promote customers freedom of decision, satisfaction and right to recourse. **Sustainable relationship with suppliers**: corporate commitment to ensure balanced and sustainable relations with suppliers, focusing on: i) promoting mutually beneficial business relations; ii) optimizing mutual profits gained through contract in terms of quality, costs and technical/technological control. **Integration of environmental factors in the supply chain**: Evaluation of the extent to which the company integrates environmental factors in the supply chain. **Integration of social factors in the supply chain**: Evaluation of the extent to which the company is integrating social standards into supply chain. **Prevention of corruption**: effectiveness of the company's anti-corruption management system. Corruption is studied in its broadest sense. Conflicts of interest are also taken into account as they can cast a doubt on the quality of the company decision-making process and on the integrity of people involved. **Prevention of anti-competitive practices**: corporate consideration for competition laws and the prevention of market distortion rules in its relations with customers, suppliers and competitors. **Transparency and integrity of influence strategies and practices**: corporate disclosure of the objectives of its lobbying practices and the resources dedicated to achieving them. Appointment of clear responsibilities and designation of specific procedures to monitor the correct implementation of the company's lobbying strategy.

Domains Definition/Category

- **Corporate Governance**. **Board of Director**: corporate commitment to set up a board of directors that is capable of controlling and advising executives and that is held accountable to shareholders. **Audit and Internal Control**: corporate commitment to establish effective risk management systems, ensuring the quality of internal reporting and the extent to which this commitment is reflected in financial information provided to the public. The board of directors is responsible for the objectivity and relevance of the system. **Shareholders Rights**: corporate commitment to ensure the fair treatment of shareholders, allowing them to actively participate in strategic decision-making. Voting rights attached to shares and the right to participate in general meetings are of fundamental importance in this regard. **Executive Remuneration**: corporate commitment to use executive remuneration as a tool to align the interests of executives and shareholders.

- **Community Involvement**. **Promotion of social and economic development**: corporate commitment to provide sustainable contributions to the economic and social development of local areas and to optimize the economic and social impact of activities: local investment, promotion of local employment, transfer of technologies and skills. **Social impacts of company products and services**: development of voluntary initiatives taking into account their product or services' impact on the community. **Contribution to general interest causes**: corporate commitments to promote voluntary community initiatives not directly related to the company's products or services: patronage, involvement in various causes of general interest, other forms of sponsorship, as well as contributions to studies or academic research on community interest issues.

Domains Definition/Category

- **Environment**. **Environmental strategy and eco-design**: company's commitment to define clear objectives and appropriate measures to ensure management of the environmental impacts of products and services. **Pollution retention and control**: extent to which the company is preventing and managing risks of accidental pollution or soil pollution. **Development of green products and services**: company's efforts to develop: i) Products and services with significantly decreased environmental impact, and ii) That may be considered as a fundamental diversification for the enterprise, either at the level of the production process (wind turbine for electricity producers), or at the product (hydrogen for oil producers or fuel cells for car makers) or at service level (green investment funds in banking sector). **Protection of biodiversity**: company's commitment to prevent risks of endangering biodiversity. Company's commitment to manage animal testing (when relevant for the sector). **Protection of water resources**: measures taken to reduce water consumption and to improve, reduce or treat wastewater emissions/water discharges. **Minimizing environmental impacts from energy use**: company's efforts to address and minimize energy-related issues (energy consumption and emissions related to energy consumption). **Management of atmospheric emissions**: steps taken by the company to control atmospheric emissions related to the production of products / projects / services. Atmospheric emissions resulting from the company's energy consumption are out of the scope of this criterion, see: 2.2- Minimizing environmental impacts from energy use and related atmospheric emissions. **Waste management**: Steps taken by companies to manage waste: i) Identification of the different sources of waste; ii) Reduction of waste production at source; iii) Management of industrial and commercial packaging and packaging waste; iv) Waste recycling, energy recovery from waste (waste to energy); v) Reduce the toxicity of hazardous waste. **Management of environmental nuisances: dust, odor, noise (Management of local pollution):** company management and reduction of local pollution (noise, dust and odors) resulting from the production processes and maintenance of installations, as well as local degradation of the environmental aesthetics. **Management of environmental impact from transportation**: company effort and results when taking into account environmental impact of its products' transportation and actions that are implemented to reduce these impacts.

Domains Definition/Category

- **Human Resources**. **Promotion of labor relations**: company's commitment to ensure the respect of independent worker's representatives through information, consultation, and notably collective bargaining, at the workplace. **Encouraging employee participation**: company's commitment to defend and promote employees' individual information and expression, and employees' participation in decision making on matters not related to collective bargaining. **Responsible management of restructuring**: capability to inform and consult employee representatives before / during restructuring process, to put in place practical measures, to prevent and limit redundancies (notably budgets, processes and reporting) and to take measures to mitigate the negative effects of redundancies on employees, notably reemployment measures. **Career management and promotion of employability**: company efforts to anticipate short and long-term employment needs and skill requirements, adapt employees' skill sets to their career paths, enable the progressive improvement in employees' qualification levels and put in place a concerted career management framework, which is transparent and individualized. **Quality of remuneration systems**: company's commitment to ensure the decency, transparency and objectivity of employees' remuneration systems. **Improvement of health and safety conditions**: company's commitment regarding the protection of employees' health and safety. **Respect and management of working hours**: initiatives taken by the company to promote the voluntary flexibility of working hours.

Domains Definition/Category

- **Human Rights**. **Respect for human rights standards and prevention of violations**: extent to which the company is complying with obligation to respect human rights in the community (community taken as a whole, i.e. within and outside of the workplace). **This obligation includes**: respect of effective exercise of fundamental human rights and personal rights ; prevention of human rights violations or complicity of violations. **Respect for freedom of association and their right to collective bargaining**: respect of trade union freedom, collective bargaining rights and promotion of collective bargaining rights. Elimination of child and forced labor; corporate contribution to the elimination of child labor and / or forced labor. **Non-discrimination**: corporate prevention of gender discrimination on workplace and other discrimination regarding work conditions, vocational training, promotion, fees, and other benefits. Positive measures and specific measures intended to protect and support women (pregnancy, maternity) or vulnerable people, constitute measures to promote equal opportunity and treatment.

Back

Fama-MacBeth - Second Step

$$
\begin{aligned}
R_{i,1} &= \lambda_{0,1} + \lambda_{s,1}\bar{S}_i + \lambda_{IV,1}\hat{IV}_i + \sum_{k=1}^{K}\lambda_{k,1}\beta_{ik} + \epsilon_{i,1} \\
R_{i,2} &= \lambda_{0,2} + \lambda_{s,2}\bar{S}_i + \lambda_{IV,2}\hat{IV}_i + \sum_{k=1}^{K}\lambda_{k,2}\beta_{ik} + \epsilon_{i,2} \\
R_{i,3} &= \lambda_{0,3} + \lambda_{s,3}\bar{S}_i + \lambda_{IV,3}\hat{IV}_i + \sum_{k=1}^{K}\lambda_{k,3}\beta_{ik} + \epsilon_{i,3} \\
&\vdots \\
R_{i,T-2} &= \lambda_{0,T-2} + \lambda_{s,T-2}\bar{S}_i + \lambda_{IV,T-2}\hat{IV}_i + \sum_{k=1}^{K}\lambda_{k,T-2}\beta_{ik} + \epsilon_{i,T-2} \\
R_{i,T-1} &= \lambda_{0,T-1} + \lambda_{s,T-1}\bar{S}_i + \lambda_{IV,T-1}\hat{IV}_i + \sum_{k=1}^{K}\lambda_{k,T-1}\beta_{ik} + \epsilon_{i,T-1} \\
R_{i,T} &= \lambda_{0,T} + \lambda_{s,T}\bar{S}_i + \lambda_{IV,T}\hat{IV}_i + \sum_{k=1}^{K}\lambda_{k,T}\beta_{ik} + \epsilon_{i,T}
\end{aligned}
\Rightarrow
\begin{aligned}
\bar{\hat{\lambda}}_0 &= \sum_{t=1}^{T}\hat{\lambda}_{0,t}/T \approx R_f \\
\bar{\hat{\lambda}}_s &= \sum_{t=1}^{T}\hat{\lambda}_{s,t}/T \\
\bar{\hat{\lambda}}_{IV} &= \sum_{t=1}^{T}\hat{\lambda}_{IV,t}/T \\
\bar{\hat{\lambda}}_k &= \sum_{t=1}^{T}\hat{\lambda}_{k,t}/T \approx \mathbb{E}[f_{k,t}]
\end{aligned}
$$

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