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Does being international make companies more sustainable? Evidence based on corporate sustainability indices

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ABSTRACT

The existing literature on the relationship between corporate sustainability performance and being a domestic or international company doubt on which type of operating has more potential to be corporate sustainable. It might be expected that two types of firms can have different advantages. We take this as an empirical question and bring it to data to find an answer. We created a methodology to compare the corporate sustainability level of different companies. In this methodology, we developed different internationality indices and evaluate the effects of those on corporate sustainability. We used firm level financial variables, time and firm effects for controlling some aspects of firm heterogeneity. We estimate the indices of the internationality using the performance ratings from MSCI KLD 400 Social Index and financial information from Wharton Research Data Services' COMPUSTAT dataset. Our results present empirical evidence to support the hypothesis that being an international firm is increasing the sustainability of the company on average. Furthermore, to better understand the mechanism of this result, we examined the effect of being international separately for the factors (these are named as strengths and concerns in KLD) that increase and decrease the sustainability score of the companies respectively. We found surprisingly that being an international firm increases both strengths and concerns more compared to a domestic firm. This suggests that international companies perform higher standards on the strengths but also face hard time to reduce the concerns due to possibly multiple regulations that they face, or coordination issues in different counties etc.
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1. Introduction

Corporate sustainability has become a buzzword in companies regardless of their size. Both small and large companies are responsible for corporate sustainability for long-term corporate success and for markets to create value in society (UN Global Compact, 2015). In order to be sustainable, there are some common actions that companies should take. They must work responsibly in accordance with universal principles; carry out actions that support the society around their own. Also we observe a persistent growth of international investor interest in the reporting of sustainability factors by corporations. In 2015, over 80% of S&P 500 companies issued sustainability reports, compared to 20% just four years earlier.

Sustainability had long been considered only through its one-dimension, Corporate Social Responsibility (CSR). However, this trend is rapidly changing as companies start to realize that sustainability is something more comprehensive and complicated to achieve. CSR activities are just, benefiting from the external firm activities to promote the social welfare. Barnett (2007) states "CSR is often described as any discretionary corporate activity intended to further social welfare." More inclusively, sustainability applications require firms to change their own business practices and operations in a manner that would eliminate negative social and environmental impact and instigate positive impact. Wilson suggests that corporate sustainability is a mixture of some concepts

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such as sustainable development, stakeholder theory, corporate accountability theory, and corporate social responsibility (CSR) (Wilson, 2003).

More broadly, sustainability is often defined as meeting the needs of the present generation without sacrificing the ability of future generations to meet their own needs. It has three basic bases such as economic, environmental and social. These three pylons are officially means people, planets and profits.

The real question for investors and managers is whether sustainability is an advantage for a company. For some companies, sustainability is an opportunity to make a variety of efforts and gain publicity for it. Moreover, market competition is having the counterintuitive effect of driving business leaders toward sustainability (Unruh, 2010). There is a view considering the concept of doing well by doing good. This idea suggests that if the companies do their works properly and by affecting the society well, eventually their customers will increase in demand as well as their financials (Cutler, 2014). Not only they will attract the customers by doing well, they will also attract the investors with this concept. Sergio Ermotti, UBS chief executive states that, "Today's investors want to see a positive impact on society and the environment as well as solid financial returns" (UBS, 2017) Sustainability for some other companies means to answer complex questions about how and why commercial applications may have a slow or serious impact on their operations. Most often the costs can be real concern when the company starts to take initiatives towards corporate sustainability (Kielmas, 2006). The adaptation of sustainability and the importance that it carries for the firm may depend on the characteristics and nature of the firm. Some firms operate mostly in domestic markets while others operate in multiple countries. The way in which international and domestic firms operate can be very different from each other, and the things they have to do in order to be sustainable can therefore differ. The question to be answered in this paper is which type of company either international or domestic is more advantageous in terms of corporate sustainability and which types of companies have been able to achieve it in general. There exist two different perspectives in the literature on this matter.

First perspective states that domestic businesses are affected by a combination of economic, legal and cultural factors specific to this domestic environment or nation. Although they have complications, domestic business is much simpler than international business (Martin, 2017). The reason behind this comparison is when there is more than one country to operate in, businesses need to understand each aspect of national or domestic environments and try to adapt to them. Moreover, in the domestic business environment, communication is often easier than in international business environment. Another important difference is that an entity generally has a certain number of requirements that must be followed in accountability in the domestic environment. However, when a company operates in an international environment, various regulations can be faced and therefore, the governance of the company should be adjusted accordingly. As a result, it might be easier to maintain sustainability within the domestic environment in terms of addressing the environmental, economic and social needs. There are a variety of domestic approaches to corporate sustainability and climate-risk reporting (Jason Thistlehtwaite and Melissa Menzies, 2016). It is easier to adopt these approaches when operating domestically.

The other perspective states that international companies will try to find more intelligent and innovative solutions in order to survive and provide a comparative advantage in these complex and difficult conditions (Eccles, Ioannou, Serafeim, 2009). There are several concerns that the international businesses need to consider. They have to innovate and create decent jobs and develop affordable products and services. Also, they need to make multi-national investments to improve the society and respond to global challenges (Bresnahan and Reiss, 1991). Moreover, they should evaluate their strengths and weaknesses properly in order to use their natural strengths and overcome the issues they may face (Taylor, 2017). It can be complicated to operate internationally and build sustainability over the corporation, but there exists an opportunity behind this idea. International firms need to be smarter to find solutions to the specified situations. If they see this circumstance as a chance and can achieve to create sustainable solutions that will keep their companies alive in this challenging environment, they can become more sustainable than domestic firms. Looking at specific examples, we can find anecdotes that international firms are sustainable firms (Confino, 2014).

In order to evaluate these two perspectives in our work, we constructed a matched data set from two main sources - KLD STATS dataset by KLD Research & Analytics, Inc. and COMPUSTAT dataset by Wharton Research Data Services - covering firm sustainability and firm financial characteristics. We analyzed the differences in sustainability indices between international and domestic firms after controlling for firm level financial variables and heterogeneity. This paper therefore contributes to the literature by empirically examining the effect of firm orientation on the firm sustainability.

We find that the international firms are more sustainable. We conducted various robustness checks by allowing different definitions of international orientation, different set of control variables, allowing for time and firm effects. The result remained intact and significant. Furthermore, to better understand the mechanism of this result, we examined the effect of being international separately for the factors (these are named as strengths and concerns in KLD) that increase and decrease the sustainability score of the companies respectively. We found surprisingly that being an international firm increases both strengths and concerns more compared to a domestic firm. This suggests that international companies perform higher standards on the strengths but also face hard time to reduce the concerns due to possibly multiple regulations that they face, or coordination issues in different counties etc. More research is needed to identify these possible mechanisms.

The rest of the paper is organized as follows. Section 2 describes our main data sources; the KLD and Compustat Datasets. In Section 3, the methodology of how the international/domestic indicators are created are explained. Also this section describes the matched dataset and the control variables. Section 4 presents the estimated econometric models and discusses the findings. Section 5 concludes.

2. KLD-compustat dataset

Data used in the analysis comes from two major sources. The sustainability levels of the companies are obtained from KLD STATS dataset. KLD STATS is a data set with annual snap-shots of the environmental, social, and governance performance of companies rated by KLD Research & Analytics, Inc. The part of the dataset this study used includes identifying company information such as company name and ticker, strength and concern ratings for multiple indicators within seven qualitative issue areas, total KLD scores of the companies annually. The companies in this dataset are North American companies. Secondly, we constructed firm level region, size and financial variables to control for the

Table 1
Summary statistics.

Variable	Obs	Mean	St. Dev.	Min	Max
Total KLD score	11,346	−0.541	2.996	−11	19
Total strengths	11,346	1.822	2.899	0	22
Total concerns	11,346	2.363	2.089	0	18
International 1	11,346	0.159	0.365	0	1
International 2	11,346	0.667	0.471	0	1
USA	11,346	0.996	0.065	0	1
EBITDA	11,314	1174	3959	−4467	78669
Sales	11,342	7146	23571	0	467231
Log(Sales)	11,283	7.185	1.979	−4.017	13.055
ROA	11,342	0.043	1.834	−16.421	193.28
ROE	11,341	0.123	4.054	−106.9	224.2
Leverage	11,346	0.208	0.216	0	3.635

effects of those aspects of company characteristics on sustainability. This second source of information is constructed from COMPUSTAT dataset. COMPUSTAT data contains thousands of annual and quarterly income statements, balance sheet, cash flow, pension, supplemental and descriptive data items for active and inactive companies.

Therefore, for the purpose of this study these two datasets are matched to form a sample that consists of both sustainability measures and firm characteristics. Final sample covers companies from KLD dataset that includes financials such as EBITDA, sales, ROA, ROE and leverage ratio for the period between years 1991–2014.

KLD covers approximately 80 indicators in seven major Qualitative Issue Areas including Community, Corporate Governance, Diversity, Employee Relations, Environment, Human Rights and Product. The qualitative indicators include both positive and negative ratings (strengths and concerns). Strengths and concerns can take a minimum value of 0. The data presented in KLD STATS is calculated by subtracting the total of concerns from the strengths. KLD score can take a negative value as a result. Therefore, one can assess the relative impact of firm operations on the sustainability level by considering the specific metrics used to measure these strengths and concerns. In principle, companies with more strengths than concerns can be regarded as more sustainable using a composite index, but also these specific dimensions can be explored to better understand the sustainability dynamics. Sample characteristics of the main sustainability index, strengths and concerns components of the index are given in Table 1. We see that the total KLD score takes a value between −11 and 19. The main index is constructed by summing up the total strengths and total concerns scores (negative of total concerns) scores. Therefore, the minimum value of −11 indicates that concerns of such company highly dominates the strengths. On the other hand, a total score of 19 is the maximum value of the index score and the corresponding company is regraded highly sustainable. On average the companies in our sample has a 4.3% ROA and 12.3% ROE values over the period for the years 1991–2014. Log sales is used in the estimation to capture the variation due to company size and the sample average of this variable is 7.18. In the appendix, the summary statistics for the international and domestic firms are given separately for comparison in Table 7 and Table 8.

2.1. Qualitative issue areas

a. Community: Community number of strengths includes charitable giving (i.e. The company has consistently given over 1.5% of trailing three-year net earnings before taxes (NEBT) to charity or has otherwise been notably generous in its giving. In 2002, KLD renamed the Generous Giving Strength as Charitable Giving.), innovative giving, non-US charitable giving, support for housing, support for education, indigenous people's relations and volunteer programs. Community number of concerns includes investment controversies, negative economic impact, indigenous people relations and tax disputes.

b. Corporate Governance: Governance number of strengths includes limited compensation, ownership strength, transparency strength and political accountability strength. Governance number of concerns includes high compensation, ownership concern, accounting concern, transparency concern and political accountability concern.

c. Diversity: Diversity number of strengths includes CEO (i.e. The company's chief executive officer is a woman or a member of a minority group.), promotion, board of directors, work/life benefits, women & minority contracting, employment of the disabled and gay & lesbian policies. Diversity number of concerns includes controversies and non-representation (i.e. The company has no women on its board of directors or among its senior line managers.).

d. Employee Relations: Employee relations number of strengths includes union relations, no-layoff policy, cash profit sharing (i.e. The company has a cash profit-sharing program through which it has recently made distributions to a majority of its workforce), employee involvement, retirement benefits strength and health and safety strength. Employee relations number of concerns includes union relations, health and safety concern, workforce reductions and retirement benefits concern.

e. Environment: Environment number of strengths includes beneficial products and services, pollution prevention, recycling, clean energy, communications and property, plant and equipment. Environment number of concerns includes hazardous waste, regulatory problems, ozone depleting chemicals, substantial emissions, agricultural chemicals and climate change.

f. Human Rights: Human rights number of strengths includes indigenous people relation strength and labor rights strength. Human rights number of concerns includes indigenous people relation concern and labor right concern.

g. Product: Product number of strengths includes quality, R&D/Innovation and benefits to economically disadvantaged. Product number of concerns includes product safety, marketing/contracting concern and antitrust.

3. Methodology

Before describing the empirical methodology used in this research and discuss its results, we will first describe the variables used in the analysis to estimate the impact of being an international company on the sustainability score.

3.1. International/domestic indices

We constructed two indices that take into account different aspects of international orientation and used both to make the distinction between international and domestic companies in the analysis. These definitions do not change with time once a firm is defined as international.

a. International Index 1: First index is defined based on the source of information obtained about the company directly. If the information is reported to come only from domestic sources, then the company is labeled as domestic; and if the information is

reported to come both from domestic sources and international sources, then the company labelled as international. In the estimation this index is constructed as a dummy variable which takes a value of 1 if the company is international and takes a value of 0 otherwise.

b. International Index 2: Second index is a bit more complex and uses multiple sources of information from direct and indirect channels. It is defined based on the combination of three different type of information sources. First of those is same as the International Index 1. If the information comes from only a domestic source, the company labelled as domestic; and if the information comes both from a domestic source and some international sources, then the company labelled as international. Secondly, the values of the taxes to foreign governments are considered. If the value of the taxes to foreign government equals to zero, then the company is considered as domestic with respect to this aspect of the measure. Finally, the main currency which is used by the company for its main operations is considered. If the only and main currency is USD, the company is considered as domestic with respect to this final aspect of the measure. After these considerations we constructed the index as a dummy variable and if a company is labelled as domestic with respect to all three measures, then the index takes a value of 0 and takes a value of 1 otherwise.[1]

It is commonly argued in the literature that there exists a reciprocal relationship between sustainability performance and financial performance (See Soytaş et al., 2017 and references therein). While resource Based view (RBV) and stakeholder theory advocate that sustainability performance affects financial performance positively, the slack resources theory supports the recursive relationship (Waddock and Graves, 1997). Firms that financially outperform their industry average have slack resources to invest in corporate sustainability activities (Surroca et al., 2010). To isolate the influence of slack resources and control for financial performance we employ leverage and return on equity as indicators of financial performance. Leverage is the ratio of debt to total assets and the related variable is denoted as leverage. Return on assets is an indicator of how profitable a company is relative to its total assets. ROA measures a corporation's profitability by revealing how much profit a company generates with assets. Another measure we used to control for the slack firm resources and its possible impact on the sustainability investments is the earnings before interest, taxes, depreciation and amortization (EBITDA). This calculation is used to measure a company's operational profitability because it takes into account only those expenses necessary to run the business on a day-to-day basis. However, there are difficulties using EBITDA as a profitability metric due to its somewhat open to exploit definition. Because of this, we use it in conjunction with other metrics for firm profitability and financial fitness. We believe that these three measures capture the firm financial performance and therefore we can argue the effect of international orientation on corporate sustainability while controlled for financial performance.

We also include natural logarithm of sales into the analysis as a control variable to be able to account for the size differences between companies. Also, we construct a dummy variable indicating whether the company is located (headquarter for multinationals) in U.S. If this variable is equal to zero, the company is located in Canada.

The panel data structure allows us to control for time and firm effects. We control for time fixed effects and capture the firm heterogeneity using a random effects structure. In this study, our main variable of interest is the dummy variable which is constructed as an indicator of whether the company is an international one. This variable is not changing over time, therefore cannot be separately identified from the firm fixed effects which would also be not changing over years by definition. Therefore, a random effects specification is estimated to control for firm specific aspects that can affect the corporate sustainability. We discuss the estimation results in the next section.

Table 2
Dependent variable: Total KLD scores.

	(1)	(2)	(3)	(4)	(5)
International1	1.308***	1.138***	0.710***	1.021***	0.572***
	(0.076)	(0.074)	(0.082)	(0.128)	(0.135)
USA			0.377		0.156
			(0.424)		(0.467)
EBITDA			0.0001***		0.0001
			(0.00001)		(0.0001)
Lnsale			0.1701***		0.105***
			(0.016)		(0.021)
ROA			−0.007		−0.009
			(0.015)		(0.013)
Leverage			−1.042***		−0.379***
			(0.126)		(0.143)
Constant	−0.748***	−0.721***	−2.116***	3.150***	2.237***
	(0.030)	(0.029)	(0.432)	(0.168)	(0.492)
Time Effects	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Firm Effects	**No**	**No**	**No**	**Yes**	**Yes**
Obs	11,346	11,346	11,255	11,346	11,255

Standard errors in parenthesis ***p < 0.01, **p < 0.05, *p < 0.1.

4. Estimation results

Table 2 presents the estimation results using the international index 1 for the company's international status. In all the estimations in Table 2, the dependent variable Total KLD Score indicates the sustainability score of the company by considering all aspects of qualitative issue areas described in the previous section. OLS estimation is conducted in specifications (1) to (3) and random effects panel data estimation is performed for specifications (4) and (5). In specification (1), we do not include any control variables. The coefficient of being international is positive and significant and implies being an international company increases the sustainability sore by 1.308 points. Specification (2) controls for time effects, and the coefficients drops to 1.138 yet still being statistically significant. Specification (3) estimates the effect of being international while controlling for EBITDA, sales, ROA, leverage of the company and time effects. The coefficient now is 0 .710 and it is statistically significant. Specifications (4) and (5) use a panel data random effects estimator. As discussed before, due to the nature of the international index variable, a fixed effects estimator cannot be performed. Specification (4)

[1] International 2 index is constructed as a conservative index. A company is considered as domestic if in any of the three dimensions it is labeled as domestic. Therefore, as can be seen from Table 1, 67 percent of all companies fall into the international category with this definition. Different specifications are tried for the international definition using the three subcategories; i.e. by allowing less restricted assumptions. Results from those specifications are not reported in the paper but can be given upon request. For instance, one definition would produce the International index 1. Therefore, with the current definition of International Index 2, it includes the largest amount of firms as international in the data. On the other hand, International Index 1 includes the smallest amount of firms. Any other index constructed with this framework will include some amount of firms between these limits. While evaluating results in Table 3, this should be kept on mind.

Table 3
Dependent variable: Total KLD scores.

	(1)	(2)	(3)	(4)	(5)
International2	0.862*** (0.059)	0.749*** (0.058)	0.435*** (0.062)	0.257*** (0.067)	0.095 (0.07)
USA			0.529 (0.425)		0.193 (0.468)
EBITDA			0.0001*** (0.00001)		0.0001*** (0.00001)
Lnsale			0.164*** (0.017)		0.114*** (0.022)
ROA			−0.007 (0.015)		−0.001 (0.013)
Leverage			−0.991*** (0.126)		−0.363** (0.143)
Constant	−1.116*** (0.048)	−1.041*** (0.047)	−2.011*** (0.422)	3.237*** (0.171)	2.194*** (0.494)
Time Effects	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Firm Effects	**No**	**No**	**No**	**Yes**	**Yes**
Obs	11,346	11,346	11,255	11,346	11,255

Standard errors in parenthesis ***p < 0.01, **p < 0.05, *p < 0.1.

controls for time and firm effects but do not control for other firm characteristics. The estimated coefficient is 1.021 and significant at the %1 level. These results imply that a company with an international status has 1.021 points higher sustainability score on average. In the final specification (5), we control for the time and firm effects in addition to the full set of controls in specification (3). The estimated effect of international index is 0.572 in this specification and again it is statistically significant at %1 level of significance.[2]

We performed the exact same estimations using the second international index we created (International 2) and checked the robustness of the results we obtained. Table 3 presents the estimation results using the international index 2 for the company's internationality status. The dependent variable Total KLD Score similarly indicates the sustainability score of the company by considering all aspects of qualitative issue areas described in the previous section, in all the estimations in Table 3. OLS estimation is conducted in specifications (1) to (3) and random effects panel data estimation is performed for specifications (4) and (5). In these estimations we find the similar results with the previous index. The results can be seen in Table 3.

From the estimations in Tables 2 and 3, we can conclude that being an international company has a positive and significant effect on the total KLD sustainability score of the company. This result supports the view that operating in an international environment and building sustainability in the corporation, international companies need to find smarter solutions and achieve to create sustainable solutions that will keep their companies alive in this challenging environment. Therefore, they stay more sustainable than domestic firms. This is an important empirical finding given that the literature does not have a clear-cut conclusion on the relationship between the firm's operating domain and the sustainability practices.

[2] In the appendix Table 6, we estimate two more specifications by adding lag ROA values as control variables and also perform the same analysis with return on equity (ROE) in place of ROA for robustness. Columns (1) and (2) performs the estimation for international index 1 and Column (3) and (4) for international index 2 respectively. The coefficient of international index remains positive and mostly statistically significant (See discussion in footnote 1).

The data presented in KLD STATS is a binary summary of KLD's positive and negative ratings. In each case, if KLD assigned a rating in a particular issue (either positive or negative), KLD indicates this with a 1 in the corresponding cell. If the company did not have a strength or concern in that issue, this is indicated with a 0. Also the KLD dataset contains firms meeting some eligibility criteria as explained in the appendix. It might be a concern that the eligibility criteria that is causing the companies to be deleted from the MSCI KLD 400 Social Index for the reasons outlined can also be related to the company's orientation or position as being international or domestic. If this is the case, there would be a selection sample problem arising from the fact that the international firms can be oversampled, or vice versa. However, the MSCI KLD 400 Social Index Methodology official document does not give direct information that allows us to test such a selection problem. Our inference from the related literature using KLD dataset for sustainability research on the other hand suggests selection might not be a big issue in our context. Also, the KLD methodology is transparent on the channels of selecting their sample. Their selection universe is restricted by various criteria as described in the methodology document. First of those is the MSCI KLD 400 Social Index uses company ratings and research provided by MSCI ESG Research to determine eligibility. Secondly, there are values-based exclusions such that MSCI ESG Business Involvement Screening Research is used to identify companies that are involved in some particular business activities, and therefore excluded. Sector representation and what they call size-segment representation are also among the criteria they use to construct the main sample.

Next, we conduct the analysis separately for the strengths and concerns in evaluating the sustainability of a company. We define a total strength score which considers only the positive aspects of the companies' sustainable behavior in contributing the total KLD score. A company might be doing very well in some operational areas, therefore having a high score, while can perform poorly in some others. Similarly, we define a total concerns score, which considers only the negative aspects of the companies' sustainability practices in contributing the total KLD score. We look separately the effect of international orientation on the companies' total strength scores and total concerns scores. This will

Table 4
Dependent variable: Total strenghts.

	Index 1	Index 2
International	1.353*** (0.115)	0.11* (0.057)
USA	−0.590 (0.386)	−0.547 (0.391)
EBITDA	0.0002*** (0.00001)	0.0002*** (0.00001)
Lnsale	0.321*** (0.018)	0.351*** (0.018)
ROA	−0.005 (0.011)	−0.007 (0.011)
Leverage	−0.092 (0.116)	−0.054 (0.117)
Constant	1.240*** (0.408)	1.2*** (0.413)
Time Effects	**Yes**	**Yes**
Firm Effects	**Yes**	**Yes**
Obs	11,255	11,255

Standard errors in parenthesis ***p < 0.01, **p < 0.05, *p < 0.1.

Table 5
Dependent variable: Total concerns.

	Index 1	Index 2
International	0.753***	0.05
	(0.083)	(0.043)
USA	−0.654**	−0.629**
	(0.285)	(0.287)
EBITDA	0.0001***	0.0001***
	(0.00001)	(0.00001)
Lnsale	0.231***	0.250***
	0.013	(0.013)
ROA	0.004	0.002
	(0.008)	0.01
Leverage	0.233***	0.025
	0.087	(0.088)
Constant	−1.155***	−1.183***
	(0.307)	(0.303)
Time Effects	**Yes**	**Yes**
Firm Effects	**Yes**	**Yes**
Obs	11,255	11,255

Standard errors in parenthesis ***p < 0.01, **p < 0.05, *p < 0.1.

help us better understand the dynamics behind the result obtained. We found that sustainability is higher in international firms but the question here is whether it is through increasing the number of strengths and/or decreasing the number of concerns. In Table 4, we run the same specification in equation (5) in Tables 2 and 3, but now using total strength score as the dependent variable. We see that being international increases the total strength score 1.35 points and 0.11 points for international 1 and international 2 indices respectively.

We conduct similar analysis by using total concerns score as the dependent variable in Table 5. Results indicate that being international increases the total concerns score 0.75 points and 0.5 (though not significant at conventional levels) points for international 1 and international 2 indices respectively. Results in Tables 4 and 5 show that, surprisingly being an international company is increasing both the total strengths score and the total concerns score related to corporate sustainability. This, however combined with the finding in Tables 2 and 3 that total KLD score increases with being international should imply that increase in the number of strengths is larger than the increase in the number of concerns. As in the tables, the coefficients of the variable International in the Table 4 are larger than the coefficients in Table 5. These results significantly improve our understanding of the mechanism through which international firms obtain better sustainable scores. In a globally challenging environment, the operations of international firms are more demanding. Coping up with multiple regulations and designing sustainable policies needs substantial effort and this requires international companies to be investing more to increase their strength areas. However, we also see that they are lacking in some other areas where the convolution of multiple practices in a single uniform way can be less feasible. This manifest itself as the increase in concerns as the company becomes international.

Endogeneity due to unobserved firm characteristics can always be an issue in empirical research on firm performances. Among the possible sources of endogeneity, unobserved productivity of the firm (a well-known problem in empirical industrial organization literature) can especially introduce biases in the estimated effect of being international. Particularly, estimation will produce biased coefficients for the effect of being international if there is correlation between a firm's unobserved productivity level and orientation. There is some evidence showing that exporting firms are on average more productive. In this respect, firm level productivity can be related to various factors such as the technological advancement of the firm, the R&D spending, the number of high skilled employees, the general firm culture for R&D, human capital, etc. and those can be different among international versus domestic firms. If these and similar factors, individually or collectively, are correlated with the firm orientation, possibly through their respective costs, then OLS estimation will be biased if there is no variable controlling for their effects (omitted variable bias). However, even when these factors are controlled for, OLS estimation might still be biased due to the inherent problem that, in general, we might not observe some aspect of the firm's productivity (Olley and Pakes, 1996). In this paper, this possible source of endogeneity is not addressed explicitly, but using random effects specification, the unobserved heterogeneity is controlled to a certain extent. Comparing equations (3) and (5) in Tables 2 and 3, the drop in the coefficient of the international index clearly indicates that the random effects capture some of the unobserved factors. A general methodology to address the source of endogeneity possibly can be a topic of future research. The contribution of the paper remains within the boundaries of analyzing the effect of being international on sustainability, yet this effect might not be causal.[3] However still, considering the differences in which international and domestic firms operate, the processes that they have to follow in order to be sustainable can differ, and therefore which would lead to more sustainable results remains as an open debate. This paper analyses this empirically and put evidence in favor of international firms on the discussion where there exist two different perspectives on the issue.

5. Conclusion

In this study, we tried to answer the question “Which type of company either international or domestic is more advantageous in terms of corporate sustainability and which types of companies have been able to achieve it in general”. We used the KLD Dataset, a rich panel data set that contains our main variables to proxy sustainability level of companies; the total KLD scores, total strength, total concern, strengths and concerns for seven different categories of the companies. We constructed the financial variables for the companies in our sample by using companies' information from COMPUSTAT dataset.

Our main results indicate that being an international firm increases the sustainability of a company. This finding is not immediately obvious since it could be easier for domestic companies to maintain sustainability within the domestic environment in terms of addressing the environmental, economic and social needs. Existing literature therefore considers both possibilities likely and develops theories on both stands. However, our empirical findings strengthen the view that international companies due to their better capacity can develop more innovative solutions to survive and exhibit comparative advantage in complex situations. Also, they need to compete in a global environment where continuous investments for improvement is required to address the global challenges.

Secondly, we found that both concerns and strengths of an international company is higher than the domestic counterpart. We conducted various robustness checks by allowing different definitions of international orientation, different set of control variables, allowing for time and firm effects. The results remained intact and significant.

[3] Or more precisely, the effect is obtained at most by controlling for the unobserved characteristics of the firms in a particular way.

Especially the second finding requires further research to better understand the mechanisms that formulate the sustainable decision making process of companies as the competitiveness is growing the success of the international companies (Porter, 1990). Each successful international company uses its own strategy, the underlying working style to be able to differ from the other companies. Companies are gaining competitive advantages through innovation actions including both new technologies and new formulations of conducting business. They perceive a new basis for competing or find better means for competing in old ways different than the domestic companies. When a company gains competitive advantage through innovation, it is more likely that it will sustain it.

The contribution of this paper remains within the boundaries of analyzing the effect of being international on sustainability, yet one might want to further investigate the causal mechanisms that leads international firms more sustainable. These possible mechanisms are not addressed explicitly in the current work, but it definitely can be a topic of future research. In this respect, the possible endogeneity in the relationship between a firm being international and its sustainability practices is mostly related to these possible mechanisms. This paper is able to provide empirical evidence that the effect of being international increases the sustainability after controlling for certain case of unobserved factors via random effects specification. Furthermore, finding that being international increases both the number of strengths and number of concerns of a company, we identified a direction to think about the possible mechanisms for causality. This result has substantial regulatory policy implications such that public policy makers should think about the influence of company orientation on the total sustainability outcome of the market.

To sum up, international companies will have more concerns than the domestic companies, and then they will try to overcome these concerns by using new ideas, innovation and technology. This suggests that international companies perform higher standards on the strengths but also face hard time to reduce the concerns due to possibly multiple regulations that they face, or coordination issues in different counties etc. If they achieve to eliminate these concerns, they will have greater number of strengths. With an increasing rate in strengths than the concerns, eventually international firms may achieve to be more sustainable. More research is needed to identify these possible mechanisms.

Appendix :

We have collected annual company data on corporate sustainability and corporate financial performance for years 1991–2014. We used social performance ratings from MSCI KLD 400 Social Index database as the sustainability measure. MSCI KLD 400 Social Index considers large, mid and small cap companies in the MSCI US IMI Index. It excludes companies which are involved in sectors such as Nuclear Power, Tobacco, Alcohol, Gambling, Military Weapons, Civilian Firearms, GMOs and Adult Entertainment. They rate eligible companies on regarding their strengths and failures (concerns) in seven categories: Community (Com-), Corporate Governance (Cgov-), Diversity (Div-), Employee Relations (Emp-), Environment (Env-), Human Rights (Hum-), Product (Pro-). Companies are excluded from the index if (i) they are deleted from the MSCI USA IMI Index, (ii) they fail the exclusion screens, (iii) their ratings fall below minimum standards. We obtained 40,485 firm-year observations. Moreover, we extracted sustainability ratings of 4613 companies between 1991 and 2013.

We collected company financial information from the Wharton Research Data Services' COMPUSTAT dataset. We focused on the North American sample of COMPUSTAT. After matching the MSCI KLD 400 Social Index firms with COMPUSTAT, we ended up with 12,943 firm-year observations covering the period from 1991 to 2015.

Table 6: Extended equation specifications.

	(1)	(2)	(3)	(4)
International	0.601***	0.602***	0.101	0.104
	(0.14)	(0.14)	(0.071)	(0.071)
USA	−0.037	−0.039	0.004	0.003
	(0.503)	(0.503)	(0.504)	(0.504)
EBITDA	0.0001***	0.0001***	0.0001***	0.0001***
	(0.00001)	(0.00001)	(0.00001)	(0.00001)
Lnsale	0.101***	0.102***	0.111***	0.111***
	(0.022)	(0.022)	(0.022)	(0.022)
ROA	−0.148		−0.148	
	(0.095)		(0.095)	
ROA (t-1)	0.021		0.021	
	(0.091)		(0.091)	
ROA (t-2)	0.117		0.116	
	(0.076)		(0.076)	
ROE		0.002		0.002
		(0.005)		(0.005)
ROE (t-1)		−0.002		−0.002
		(0.002)		(0.002)
ROE (t-1)		0.0002		0.0002
		(0.002)		(0.002)
Leverage	−0.414***	−0.415***	−0.395***	−0.395***
	(0.146)	(0.146)	(0.146)	(0.146)
Constant	2.299***	2.294***	2.25***	2.243***
	(0.528)	(0.528)	(0.529)	(0.529)
Time Effects	**Yes**	**Yes**	**Yes**	**Yes**
Firm Effects	**Yes**	**Yes**	**Yes**	**Yes**
Obs	10,743	10,741	10,743	10,741

Standard errors in parenthesis ***p < 0.01, **p < 0.05, *p < 0.1.

Table 7: Summary statistics of domestic firms.

Variable	Obs	Mean	St. Dev.	Min	Max
Total KLD score	3773	−1.12	2.06	−10.00	11.00
Total strengths	3773	0.77	1.36	0.00	12.00
Total concerns	3773	1.88	1.44	0.00	11.00
USA	3773	1.00	0.00	0.00	1.00
EBITDA	3745	73.52	396.88	−13666.00	10657.00
Sales	3771	628.54	3381.55	0.00	108465.00
Log(Sales)	3701	6.44	8.13	−2.01	11.59
ROA	3771	−5.06	507.53	−130077.00	2537.83
ROE	3771	−0.35	96.48	−23155.90	2911.01
Leverage	3773	0.49	11.62	0.00	1673.00

Table 8: Summary statistics of international firms.

Variable	Obs	Mean	St. Dev.	Min	Max
Total KLD score	7573	−0.25	3.33	−11.00	19.00
Total strengths	7573	2.35	3.29	0.00	22.00
Total concerns	7573	5.18	2.16	3.00	10.00
USA	7573	0.68	0.46	0.00	1.00
EBITDA	7569	1013.78	4107.46	−45026.00	130622.00
Sales	7571	5642.77	21234.33	0.00	483521.00
Log(Sales)	7582	8.64	9.96	−3.03	13.09
ROA	7571	−0.47	21.03	−1807.50	2369.43
ROE	7570	−0.01	18.55	−1037.78	2143.00
Leverage	7573	0.34	9.33	0.00	1231.00

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