The impact of Environmental, Social and Governance (ESG) standards on the value of cash holdings: Evidence from Canadian Firms

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Abstract. Investments in environmental and social initiatives by companies have increased considerably in recent years, as a response to an increasingly complex and demanding socio-economic environment. However, a question that still needs to be answered is whether these investments provide a positive return or contribute to value creation. This paper aims to contribute at filling this gap by investigating the relationship between Corporate Social Performance (CSP) as measured by investments in Environmental, Social and Governance (ESG) practices and firm value by comparing the market value of an extra dollar of cash for firms with high and low ESG ratings. Our results show that an extra dollar of cash is valued at a premium of $0.13 (or 13%) for high CSP firms as compared to low CSP firms. We find evidence to support the stakeholders theory and the resource based view by showing that managers who invest in ESG practices that receive the support of key stakeholders are acquiring unique resources and creating a sustainable competitive advantage, which positively affects value. We also show evidence that financial slack has value in the presence of future investment opportunities and when the cost and availability of capital is uncertain.

Key words: Corporate Social Performance (CSP), Environmental, Social and Governance (ESG) practices, cash holdings, firm value.

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I. Introduction

Corporate investment in environmental and social initiatives has increased substantially in recent years, as a response to an increased pressure from different stakeholders groups to improve companies' social and environmental performance (Waddock 2004). In order to measure these investments and its relevance, Environmental, Social and Governance (ESG) indices have been created by investment research companies (e.g. Thomson Reuters) with the objective of measuring firm's progress and performance in these areas, or in a broader extent, firms' corporate social performance (CSP). These ratings are being used by a growing number of investors and investment managers as a guide to build their portfolios[2]. However, a question that still needs to be answered is whether corporate investments in social and environmental initiatives provide positive financial return or, in other words, create firm value. The relationship between corporate social performance (CSP) and corporate financial performance (CFP) is not straightforward, there is no consensus in the literature about a positive or negative association, and decades of research in this area has only provided mixed and divided results. Although the meta-analyses of Orlitzky, Schmidt, and Rynes (2003) and Margolis and Walsh (2003) show there is a general positive impact of CSP on CFP, hitherto there is no consensus on this positive impact (Waddock and Graves 1997b, Griffin and Mahon 1997, McWilliams and Siegel 2000). Moreover, a number of studies find exactly the opposite of a positive association, and some authors even show that firms may engage in Corporate Social Responsibility (CSR) practices to disguise other value-destroying or even fraudulent activities (i.e. earnings management) and deceive stakeholders (Prior, Surroca, and Tribó 2008). The main reason for this lack of evidence of a direct relationship is attributed to some

[2] This new reality is evidenced by the growing number of investment managers, business owners and investment corporations that are signatories of the United Nations (UN) Principles for Responsible Investment (PRI) initiative. It currently has 1227 signatories (63% of which are investment managers) that committed to the six principles. http://www.unpri.org/about-pri/the-six-principles/

methodological weaknesses, in special model misspecification (Margolis and Walsh 2001) of previous studies. However, probably the most prevalent problem among such studies is the lack of a clear understanding of the relationship between CSP and CFP, or in which ways the investment in social and environmental practices affects financial performance. Some recent studies try to disentangle this relationship by proposing an indirect association between CSP and CFP that is mediated by other factors, as for example customer awareness (Servaes and Walsh 2013), firm idiosyncratic risk (Luo and Bhattacharya 2009), and intangible assets (Surroca, Tribo and Waddock 2010).

In line with this evidence, in this paper we examine the value effects of investments in environmental, social and governance (ESG) practices by focusing on the valuation of a specific asset class: cash holdings. Cash is the most liquid of all assets, and for this very reason the most vulnerable to managers' discretion and potential misuse (Jensen 1986). As firms accumulate cash beyond what is prescribed by corporate finance theories (i.e. the precautionary and transaction costs motives for holding cash), financial slack is created. Since cash is viewed as short term discretionary slack, managers have the discretion to decide where to invest these resources. Bad intentioned managers can use cash to increase their power, by engaging in value-destroying acquisitions, for example, as Harford (1999) points out. However, investments in ESG are also discretionary considering McWilliams and Siegel (2000, p.117) definition of corporate social responsibility as "actions that appear to further some social good, beyond the interest of the firm and that which is required by law." The assumptions embedded in such definition have several implications. First, investment in ESG initiatives is discretionary (since it is not required by law). Second, as cash is highly discretionary and is readily available it can be defined as a short-term discretionary slack, and as such it is necessary condition for companies to invest in ESG practices.

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Finally, investors would value a dollar of cash invested in value-creating ESG practices at a premium, since the same dollar of cash could be invested in value-destroying activities at managers' discretion. We argue that value-enhancing ESG initiatives are investments that enable companies to acquire resources that are unique, inimitable and valuable (Barney 1991), and that receive the support of key stakeholders (Freeman 1984); therefore by internalizing these resources companies can create a sustainable competitive advantage and ultimately increase firm value.

Our objective with this paper is to measure the value effects of investments in ESG by comparing the value of one dollar of cash in companies that accumulate cash and present superior CSP, and the value of the same dollar of cash accumulated by companies that do not invest in ESG or that present low CSP, as measured by the ESG scores. By comparing these two groups we are able to gauge investors' perceptions of the degree of agency costs associated with investments in CSR. Our measure of CSP is the ranking provided by the Sustainalytics responsible investment research firm called ESG index. The ESG index comprehends a wide range of activities carried out by firms, from the way they treat their employees and how they select their suppliers to the engagement in bribery and tax evasion activities. We conduct our analysis with a large subset of Canadian publicly traded firms covered by Sustainalytics over the period 2009-2012.

Our results show that the same dollar of cash is valued at a premium of 13 cents in companies with superior CSP or with high standards of ESG practices. We also find that investors pay a premium for liquidity when future growth opportunities are expected and the cost and availability of capital is uncertain in the context of a recessionary period (2009-2012), as is the case of our study.

The remainder of the paper is organized as follows. Section 2 offers a revision of the literature and presents the hypotheses. Section 3 describes the data and methodological approach. Section 4 analyses and discusses the results and, Section 5 concludes the paper.

II. Theory and Hypotheses

Stakeholder management and ESG practices

The stakeholder approach developed in the 80s provided the conceptual framework for the development of the idea that a firm has a broader spectrum of groups that interact with the organization, beyond the shareholders' group (Freeman 1984). This approach postulates that in order to develop a successful business strategy, managers need to understand and internalize the needs of key stakeholders, and these relationships need to be managed in a way that secures the survival of the firm. In contexts of high competition, scarcity of resources and complex and dynamic environments managers are required to demonstrate the capability of orchestrating all stakeholders (including shareholders) in order to maximize value creation. The current business environment is particularly challenging for managers, as firms' stakeholders are now composed by a crowd of more powerful groups with aligned or divergent interests. These groups have become more organized and structured in recent years, with more articulated arguments and ways to pressure companies to attend their interests. Social media plays an important role in this new reality, especially considering the use that some stakeholders make of it, it has since become a double-edged sword: it can boost a company's marketing strategy but it can also damage a company's reputation in the blink of an eye. These phenomena have created a new reality for businesses that requires managers that are capable of implementing an effective stakeholder management system. Donaldson and Preston (1995) argue that the stakeholder theory can be descriptive, instrumental or normative. From a normative perspective, the theory is justified by the

argument that it respects the notion of a social contract, and that moral and ethical values should guide the actions of any corporation. Phillips (1997) argue that when two groups enter into a collaborative agreement they have the moral duty to act fairly. The application of such principle to stakeholders management is straightforward and implies that managers should consider, respect and weight the interests of key stakeholders when making corporate decisions, as the results of these decisions affect all stakeholders. Harrison and St. John (1996) justify a proactive stakeholder management from an instrumental perspective arguing that "it pays off in the end" by providing higher returns to the corporation[3]. However, they point out to the fact that probably the most important benefit of stakeholders management is that "it creates and preserves organizational flexibility" (p. 49). Organizational flexibility is related to firms' capacity to adequately respond to environmental changes that result in an alteration in the level and availability of resources in a given system (Dess and Beard 1984). Financial crises or other environmental jolts (Meyer 1982) are examples of situations where drastic changes in the level of resources available in the environment cause a major system reconfiguration. We argue in this paper that managers who promote a proactive stakeholder management strategy are better positioned to quickly respond and to lead their organizations in the adaptation process to this new configuration, and thus create a competitive advantage over their competitors that are not as quickly responsive to the change. By creating this so-called "good management" (Freeman 1984), managers can ultimately determine and secure the survival of their organizations by coordinating and addressing the demands of multiple stakeholders in a fair way. The successful coordination of multiple stakeholders requires a set of management skills and capabilities that enable managers working within the stakeholders

[3] The authors list several reasons as justifications for stakeholder management, to mention a few: enhanced ability to predict/control the external environment; higher levels of operating efficiency; fewer incidents of damaging moves by stakeholders; less conflict with stakeholders resulting in fewer legal suits (Harrison and St. John 1996) p. 48.

perspective to deliver results in a more efficient and effective way them those who are still working exclusively within the paradigm of shareholder wealth maximization.

Therefore, stakeholder theory (Freeman 1984, Donaldson and Preston 1995) suggests that by increasing efficiency, "good management" can ultimately improve financial performance (Waddock and Graves 1997b, Freeman and McVea 2001, Orlitzky, Schmidt, and Rynes 2003). Conversely, increased financial performance is an enabling condition for firms to improve their social and environmental performance, as it provides the necessary slack for firms to invest in ESG practices. This assertion is supported by the arguments put forward by the slack resources theory (Waddock and Graves 1997a, Nohria and Gulati 1996), that firms need financial slack to invest and engage in innovation. According to Nohria and Gulati (1996, p. 1246) slack is defined as "the pool of resources in an organization that is in excess of the minimum necessary to produce a given level of organizational output." Investments in ESG practices can be viewed as risky investments due to its uncertain nature, are highly discretionary but at the same time have a high potential to provide superior financial return, which make them very similar in nature to investments in innovation. Moreover, we argue that by investing in ESG practices, firms can acquire resources that are unique (and as such inimitable) and valuable, as stated by the resource based view (Barney 1991), which can enable them to create a sustainable competitive advantage. However, while financial slack provides a cushion of protection against possible losses with experimentation and innovation, being a necessary condition for firms to engage in ESG practices (Waddock and Graves 1997b, Bowen 2003, Zona 2012), we also argue that only ESG practices that receive the support of key stakeholders are able to provide such sustainable competitive advantage for firms in the long run.

ESG practices and cash holdings

Companies hold cash for one or more of the following reasons: to avoid the transaction costs of new debt and equity issues when future growth opportunities are present (transaction costs motive), to face their cash short term needs (precautionary motive) and as a hedge against future shortfalls of cash (hedging motive) (Keynes 1936, Acharya, Almeida and Campello 2007). Opler, Pinkowitz, Stulz, and Williamson (1999) and Kim, Mauer and Sherman (1998) argue there is an optimal level of cash that according to the trade-off approach is the one that offsets the costs of holding it. Assuming a firm whose cash holdings are at the optimal level, any marginal dollar of cash added to the firm's assets should add one dollar to the firm's market value (ignoring taxes and the cost to transfer that dollar of cash to shareholders). However, some frictions make this value differ from one for a series of reasons[4], one of them being the degree of financial leverage. Recently, a number of studies has showed that the level of cash is also associated with other factors such as firm value and firm risk (Opler et al. 1999, Dittmar, Mahrt-Smith, and Servaes 2003, Faulkender and Wang 2006, Harford, Mansi, and Maxwell 2008, Hartzell, Titman, and Twite 2005). Moreover, because firms' financing and investment policies are intimately related to the value of cash, recent empirical studies have focused on determining the moderating effect of corporate governance in the relationship between cash holdings and firm value (Ammann, Oesch, and Schmid 2011, Dittmar and Mahrt-Smith 2007, Pinkowitz, Stulz, and Williamson 2006, Harford, Mansi, and Maxwell 2008, Kalcheva and Lins 2007, Kusnadi 2011, Attig et al. 2013). These studies are based on the argument that cash, the most liquid of all assets, can be used at managers' discretion in value-enhancing or value-destroying activities. As postulated by the agency theory (Jensen and Meckling 1976), managers may misuse corporate resources if no

[4] For an extensive discussion on this topic, see Faulkender and Wang (2006).

mechanisms of control and monitoring are in place. For this reason, corporate governance is an important determinant factor in the valuation of cash holdings, as it is expected that the same dollar of cash will be invested in value-enhancing activities in well-governed firms but will probably be invested in value destroying activities in poor governance companies.

We argue that investors value investments in ESG practices in a similar way. In other words, since ESG rankings are widely available and a growing number of investors use these scores to make investment decisions, we hypothesize that investments in ESG practices influence the valuation of firms' cash resources. The logic is that by investing in environmental and social initiatives companies are adapting to this new reality where resources are scarce and expensive, customer awareness is a critical factor, and they need to create a competitive advantage to guarantee its survival in the long run. From an investor's perspective, the same dollar of cash should be more valuable when accumulated by firms that invest in ESG practices in an efficient way as compared to firms that inefficiently or disguisedly invest in ESG or that do not invest in ESG practices at all. The "quality" of the investment in ESG initiatives is observable by investors from the ESG scores released by investment research firms. Using ESG scores as a proxy for corporate social performance (CSP) we expect companies that present superior CSP to receive higher valuation of its cash holdings by the market. Our hypothesis is put forward accordingly:

H_1: Ceteris paribus, the value of a marginal dollar of cash is positively associated with firms' corporate social performance (CSP) as measured by the ESG score.

III. Empirical methods

Our sample is composed by 201 non-financial publicly traded firms listed on the Toronto Stock Exchange (TSE) for which there is at least two years of observations from 2009 to 2012 in the

Sustainalytics database (previously known as SiRi Pro and Jantzi Research). To be consistent with the previous literature, banks and financial services firms were excluded from the sample, as the level of their cash reserves is highly regulated. The Sustainalytics database provides data on ESG practices for hundreds of companies around the world, and it is the most important supplier of qualitative analyses of responsible investment in North America and Europe. From Sustainalytics, we use the company scores that is calculated by weighing the different dimensions (environmental, social and governance scores) based on a weighting matrix that includes 160 items including different categories such as business ethics, board characteristics, employees, supply chain, customers, operations, and products and services. The ESG scores range from 0 (worse) to 100 (best). All financial and accounting data was collected annually at the end of each fiscal year from COMPUSTAT.

Research variables

To measure the effect of ESG practices on the value of cash, we use the model proposed by Faulkender and Wang (2006) and the adaptation proposed by Dittmar and Mahrt-Smith (2007) to include ESG. The excess return for firm *i* during year *t* less the return of stock's *i* benchmark portfolio, as defined by Fama and French (1993), is intended to be the measure of *change in firm value*. The dependent variable is the stock return and the independent variables are the change in cash, both by itself and its interaction with (1) the lag value of cash ($C_{i,t-1}$); (2) the leverage ratio and, (3) the ESG company score. To determine the effect of ESG on the value of cash, we allow for the interaction between the change in cash with the company score, but also with the individual scores (environmental, social and governance). We also include control variables that control for the optimal level of cash (i.e. operating profitability, investment and financing decisions, dividend payout, the level of cash at the beginning of the year and the degree of financial leverage). The

dependent variable is the stock's excess return for year *t* which is defined as the return of the stock during the calendar year *t* less stock's *i* benchmark portfolio return during the same period. The benchmark portfolios are formed on size and book-to-market value following Fama and French (1993). The excess return for firm *i* is the difference between the benchmark return for this company's stock and the return of the stock. The dependent variable is calculated by simply subtracting the portfolio return to which stock *i* belongs from its realized return during year *t*.

Therefore, the main specification used is the model proposed by Faulkender and Wang (2006) adapted to include the interaction between the change in cash and ESG, as follows, which is estimated using panel data fixed effects:

$$r_{i,t} - R_{i,t}^{B} = \gamma_0 + \gamma_1 \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_2 \frac{\Delta E_{i,t}}{M_{i,t-1}} + \gamma_3 \frac{\Delta NA_{i,t}}{M_{i,t-1}} + \gamma_4 \frac{\Delta I_{i,t}}{M_{i,t-1}} + \gamma_5 \frac{\Delta D_{i,t}}{M_{i,t-1}} +$$

$$+ \gamma_6 \frac{C_{i,t-1}}{M_{i,t-1}} + \gamma_7 L_{i,t} + \gamma_8 \frac{NF_{i,t}}{M_{i,t-1}} + \gamma_9 \frac{C_{i,t-1}}{M_{i,t-1}} \times \frac{\Delta C_{i,t}}{M_{i,t-1}} + \gamma_{10} L_{i,t} \times \frac{\Delta C_{i,t}}{M_{i,t-1}} +$$

$$+ \gamma_{11} ESG_{i,t} \times \frac{\Delta C_{i,t}}{M_{i,t-1}} + \varepsilon_{i,t}$$

Where ΔX indicates a change in X from year $t-1$ to t. The dependent variable is the excess stock return $r_{i,t}$ - $R_{i,t}$, where $r_{i,t}$ is the stock return during year t and $R_{i,t}$ is the benchmark portfolio return (calculated following Fama and French (1993) methodology). The independent variables are: $M_{i,t}$ is the market value of equity. $C_{i,t}$ is cash and cash equivalents. $E_{i,t}$ is earnings before extraordinary items. $NA_{i,t}$ is net assets (total assets net of cash), $I_{i,t}$ is interest expenses, $D_{i,t}$ is dividend payments, $L_{i,t}$ is $Debt_{i,t} / (Debt_{i,t} + M_{i,t})$, to measure leverage and is calculated as total debt (short term debt + long term debt) divided by the sum of total debt plus the market value of equity, $NF_{i,t}$ is new

finance (net cash from financing activities), $ESG_{i,t}$ is the Sustainalytics company score. The variables are described in Table 3. The other variables control for profitability ($E_{i,t}$), investment ($NA_{i,t}$) and financing ($I_{i,t}$, $D_{i,t}$, $L_{i,t}$ *and* $NF_{i,t}$) strategies. The initial prediction is that coefficient γ_{11} (ESG) is positive and statistically significant which means that we expect the interaction between changes in cash and ESG to be statistically significant (H_1). The interaction between the change in cash with our measure of CSP is calculated by multiplying the change in cash to the ESG score ($ESG*\Delta C_t$). We expect the interaction of changes in cash with the initial cash level, coefficient γ_9 ($C_{i,t-1}$), to be positive and statistically significant since the amount of cash on hand at the beginning of the year is a determinant factor of how much cash is accumulated during the year. The interaction of changes in cash with leverage, coefficients γ_{10} ($L_{i,t}$), is expected to be negative and statistically significant since cash is defined as negative debt as cash increases it should be used to pay back debt. All independent variables (except leverage) are deflated by the lagged market value of equity ($M_{i,t-1}$), therefore we are able to measure the dollar change in the market value of one dollar of cash added to the firm's cash reserves.

Table 1 provides descriptive statistics for sample variables. Panel A shows data on cash and cash equivalents as a percentage of total assets and ESG scores for the sample firms. The average sample firm held around 10% of its assets in the form of cash during the sample period. However, the distribution is highly skewed with the median cash holdings to total assets being around only 5%. Excess return for the median firm is -7.1% and, as expected, the distribution is right-skewed with the mean being -1.8%. Earnings have grown during the sample period, since the average change in earnings is 1.4% (mean 0.3%), an important result considering that our sample period includes the years following the 2008 financial crisis. The average ESG score for the sample firms is 43.74 out of 100, but the median firm has a score of 52.91. It can be observed from the

breakdown per dimension that the environmental score has the lowest average (39.75) and the governance score the highest (50.91). Total assets, a proxy for firm size, have increased by 32% from 2009 to 2012 and the average leverage ratio has remained around 21% of total assets for the entire sample period. Panel B reports the industry average for cash and leverage ratios to total assets. Real Estate Investment Trusts (REITs) present the highest leverage ratio and the lowest cash to assets ratio, with Metals and Minerals presenting the highest cash to assets ratio and the lowest leverage ratio.

Table 1: Summary statistics

Panel A. All Sample Firms	**Mean**	**Median**	**Standard Deviation**	**25th percentile**	**75th percentile**
Cash/ Total Assets 2009	10.4%	5.5%	14.2%	1.3%	12.3%
Cash/ Total Assets 2012	8.3%	3.6%	11.0%	1.0%	11.4%
Cash/ Total Assets 2009-2012	9.6%	4.8%	12.6%	1.1%	12.9%
Excess return ($r_{i,t}$ - $R_{i,t}$) 2009-2012	-1.8%	-7.1%	74.9%	-27.1%	13.3%
Change in Earnings (ΔE_t) 2009-2012	1.4%	0.3%	31.4%	-2.26%	3.3%
ESG Total Score	54.48	53.67	7.09	49.41	59.62
Environmental Score	50.03	49.58	9.12	43.39	55.94
Social Score	53.70	52.86	8.54	48.30	58.79
Governance Score	62.32	61.70	10.10	55.34	68.91
Total Assets 2009	5,827.4	2,006.6	10,271.8	890.8	4,905.5
Total Assets 2012	7,673.6	2,801.5	13,013.5	1,403.9	7,496.9
Total Assets 2009-2012	6,682.4	2,343.4	11,621.8	1,027.3	5,905.5
Leverage ratio 2009	21.0%	17.7%	17.9%	5.9%	30.3%
Leverage ratio 2012	21.5%	20.0%	15.8%	9.7%	32.1%
Leverage ratio 2009-2012	20.9%	18.9%	16.8%	7.0%	31.9%

Panel B. Industry Average	**Leverage/Total Assets**	**Cash/Total Assets**
Metals and Minerals	7.1%	27.1%
Oil and Gas	21.1%	5.6%
Manufacturing	17.0%	9.1%
REITs	41.7%	4.5%
Services	22.2%	7.7%
Utilities	31.9%	4.8%
Food and Beverage	21.6%	6.2%
Retail – Miscellaneous	14.3%	12.5%
Transport	28.1%	8.1%
ITC (Information Technology and Communications)	21.6%	9.8%

Panel A shows descriptive statistics (mean, median, standard deviation, minimum, and maximum) for total assets and the cash-to-assets ratio. Panel B provides the industry average for total assets and the ratio of cash holdings to total assets (Cash/TA) for the period of 2009-2012.

The correlations between research variables (ESG, R&D expenses, stock return, cash and leverage) are provided in Table 2. The correlations among variables are relatively low (all coefficients are below 0.3) which does not raise concerns over multicollinearity. As previous research has pointed out to the endogeneity of CSR and governance, we avoid drawing any conclusions from the analysis of correlations.

Table 2: Pearson correlations

	Lag Cash	Excess Return	Lever	ESG score	New Finance
Excess Return	0.1827***				
Lever	0.1208***	0.2019***			
ESG score	-0.0456	-0.1327***	0.0312		
New Finance	-0.0124	0.1755***	-0.0490	-0.1456***	
R&D	0.2219***	0.0113	0.0717**	-0.0125	-0.0181

*This table provides Pearson correlations for selected variables used in the study. *,**,*** denotes statistical significance at the 10%, 5% and 1% respectively.*

Table 3: Research variables

Variable	**Measure**	**Code**
ESG company score	Company score from Sustainalytics (from 0 to 100)	$\boldsymbol{ESG_{i,t}}$
Cash	Cash and Cash equivalents in year *t*	$\boldsymbol{C_{i,t}}$
Leverage	Total debt / (Total debt + Market value of equity) in year *t*	$\boldsymbol{L_{i,t}}$
Dividends	Dividends paid in year *t*	$\boldsymbol{D_{i,t}}$
Earnings	Earnings before extraordinary items in year *t*	$\boldsymbol{E_{i,t}}$
Interest	Interest expenses in year *t*	$\boldsymbol{I_{i,t}}$
Stock return	Stock annual return	$\boldsymbol{r_{i,t}}$
Portfolio return	Fama and French (1993) benchmark portfolio return	$\boldsymbol{R_{,t}}$
Market capitalization	Stock price times the number of shares outstanding at the end of year *t*	$\boldsymbol{M_{i,t}}$
Net Assets	Total assets net of cash in year *t*	$\boldsymbol{NA_{i,t}}$
New finance	Net cash from financing activities (net new equity issues plus net new debt issues) in year *t*	$\boldsymbol{NF_{i,t}}$

Table 4: Regression results

This table presents the return regressions following Faulkander and Wang (2006) and Dittmar and Mahrt-Smith (2007) models. The dependent variable is the firm's excess stock return relative to the portfolio return calculated according to Fama and French (1993). All variables except for L_t are deflated by the lagged market value of equity (M_{t-1}). Δ indicates the change from previous year and the panel data fixed effects regressions are estimated on a panel of 201 non-financial Canadian firms listed on the Toronto Stock Exchange from 2009 to 2012. The dependent variables are described in Table 2. *P*-values based on robust standard errors are in brackets. *, **, and *** means significance at 10%, 5% and 1% levels respectively.

	Dependent variable = excess stock return ($r_{i,t}$ - $R_{i,t}$)					
	[1]	[2]	[3]	[4]	[5]	[6]
ΔC_t	0.787***	0.322	0.072	0.031	0.093	0.113
	(0.000)	(0.252)	(0.816)	(0.921)	(0.767)	(0.716)
$ESG\ score_t * \Delta C_t$			0.013*			
			(0.073)			
$Environmental_t * \Delta C_t$				0.015**		
				(0.039)		
$Social_t * \Delta C_t$					0.012*	
					(0.095)	
$Governance_t * \Delta C_t$						0.010
						(0.122)
ΔE_t	0.718***	0.428***	0.389***	0.384***	0.392***	0.395***
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.000)
ΔNA_t	0.056***	0.103***	0.097***	0.096***	0.098***	0.099***
	(0.000)	(0.004)	(0.007)	(0.000)	(0.006)	(0.006)
ΔI_t	-0.023	2.272	1.699	1.669	1.723	1.757
	(0.986)	(0.129)	(0.266)	(0.273)	(0.261)	(0.252)
ΔRD_t	-8.169	-8.966*	-9.135*	-	-	-
	(0.125)	(0.088)	(0.081)	9.172*	9.130*	9.094*
				(0.080)	(0.082)	(0.083)
ΔD_t	-0.044	-0.231	-0.142	-0.131	-0.149	-0.155
	(0.965)	(0.816)	(0.886)	(0.895)	(0.880)	(0.875)
NF_t	-0.310***	-0.187	-0.157	-0.149	-0.161	-0.163
	(0.006)	(0.103)	(0.175)	(0.197)	(0.165)	(0.160)
C_{t-1}	1.820***	1.946***	1.924***	1.917***	1.923***	1.935***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$C_{t-1} * \Delta C_t$		1.985***	2.083***	2.134***	2.065***	2.048***
		(0.005)	(0.003)	(0.003)	(0.004)	(0.004)
L_t	0.222***	0.131*	0.141**	0.141**	0.140**	0.140*
	(0.001)	(0.067)	(0.049)	(0.048)	(0.050)	(0.051)
$L_t * \Delta C_t$		0.375***	0.383***	0.387***	0.382***	0.381***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Intercept	-0.354***	-	-	-	-	-
	(0.000)	0.313***	0.314***	0.313***	0.313***	0.315***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations	804	804	804	804	804	804
R-squared	0.1715	0.1971	0.1960	0.1965	0.1961	0.1954

IV. Results

Table 4 reports the estimated coefficients for different specifications of the model. Column [1] shows the regression coefficients of the model without interactions. This first specification is intended to measure the marginal value of cash for the average firm, and it shows that shareholders value an extra dollar of cash at $0.79. This value can be compared with the results obtained for the U.S. by Faulkender and Wang (2006) of $0.75 and Pinkowitz and Williamson (2007), who report an estimate of about $0.97 on the marginal value of a dollar of cash. If we ignore transaction costs and taxes at the shareholders level, one dollar of cash should add one dollar to firm value. Since our results show a discount being applied to the value of one extra dollar of cash, it indicates that transaction costs are relevant in the Canadian context. In Column [2] we allow for the interaction of cash with the level of cash the firm has on hand in the beginning of the year ($C_{t-1}*\Delta C_t$) and leverage ($L_t*\Delta C_t$). The results of this specification suggest that an extra dollar of cash in a firm with initial cash holdings of 10% of its equity is worth 9.9 cents more than in a firm with only 5% of cash at hand in the beginning of the period. The fact that the coefficient of the interaction term ($C_{t-1}*\Delta C_t$) is positive and statistically significant supports the hypothesis that firms that accumulate cash as a hedging strategy against future shortages of financing (hedging motive) receive a higher market valuation. Similarly, the interaction of cash with leverage ($L_t*\Delta C_t$) shows a positive and statistically significant coefficient, which contradicts our prediction that this coefficient should be negative. The relationship between cash and leverage is complex, as high leverage firms can suffer from two potential problems: the debt overhang problem and the underinvestment problem. These two problems derive from the fact that in high leverage firms the likelihood that shareholders will pocket this extra dollar of cash is lower than in firms with lower levels of financial leverage. Besides, the increased risk of bankruptcy caused by high levels of financial leverage create an

incentive for shareholders to increase their required return on that specific stock, reducing its present value. The coefficient on leverage alone (level variable, L_t) and on the interaction of leverage with cash ($L_t*\Delta C_t$) are both positive and statistically significant, which indicates a positive association with firm value. If in theory the agency problems between shareholders and debt holders created by financial leverage negatively affect the relationship between leverage and firm value, why are our results showing a positive association? One explanation lies on the context of our study. Our sample covers the period of economic recession of 2009 to 2012, when growth opportunities are scarce and isolated. In this context, financial leverage works as a governance mechanism to discipline managers, as companies with more leverage have less rent available for expropriation. As proposed by Jensen (1986), companies with excess cash that are not subject to the discipline of external financing have increased agency costs. We interpret this result as evidence that, in the current context, shareholders value an extra dollar of cash in firms with higher levels of leverage at a premium. For instance, the same dollar of cash is valued at 3.8 cents higher in a company with 30% leverage ratio than in a company with a leverage ratio of 20%. We use the coefficient of the change in cash and the coefficient of the interactions (leverage and beginning cash) with the change in cash to estimate the marginal value of cash for the average sample firm. The sample means for leverage and beginning cash to equity are 20.9% and 10.4% respectively, therefore, the value of an extra dollar of cash for the average sample company considering the interactions is $0.62.

Next, we allow for the interaction of cash with CSP, thus Columns [3-6] introduce the interaction between ESG scores and the change in cash. The results indicate that the marginal value of cash is sensitive to firm's CSP. The estimated coefficients of the interactions of cash with the ESG company score ($ESG_{t-1}*\Delta C_t$) and with each dimension of the company score (environmental,

social and governance) are positive and statistically significant (with the exception of the governance score that is positive but not significant). Since we use the change in all variables deflated by the market value of equity, it allows us to measure the market value of a dollar held by the firm. Therefore, the economic interpretation of these coefficients is as follows: considering the sample means for cash, leverage and ESG, for an average firm with cash holdings of 10.4% of equity, financial leverage of 20.9% and average ESG score of 54.48, the marginal value of its cash is valued at $1.07. However, the same dollar of cash is valued at as high as $1.13 for companies with higher CSP (companies in the top quartile of the distribution) and at par, $1.00, for companies with lower ESG standards (companies in the bottom quartile of the distribution).

Our results support the stakeholders theory by showing that the same dollar of cash is more valuable in firms with superior CSP, as opposed to firms with lower or null CSP. A question that have intrigued scholars and practitioners for the last 40 years is whether investments in corporate social responsibility (CSR) create value. Our results show evidence that investors are paying a premium for stocks of companies that efficiently invest in ESG practices and consequently present higher CSP as measured by the ESG scores. This result supports the resource based view (Barney 1991), as companies that invest in ESG are acquiring competencies and resources that are hard to copy or imitate and that can create a sustainable competitive advantage. It is also corroborated by recent surveys showing that most CEOs believe that investing in CSR is critical for their company's future and its competitive position (MIT Sloan Management Review, 2012).

Columns [4], [5], and [6] report the coefficients for the regressions using the individual scores for the environmental, social and governance dimensions. All three coefficients are positive but only the environmental and social dimensions present statistically significant coefficients, the governance dimension has a positive impact on firm value but it is not statistically significant. The

positive effect of governance on firm value is well described in the literature (Gompers, Ishii, and Metrick 2003, Ammann, Oesch, and Schmid 2011, Dittmar and Mahrt-Smith 2007, Harford, Mansi, and Maxwell 2008). However, our results are consistent with the results obtained by other Canadian studies (Gupta, Kennedy, and Weaver 2009, Klein, Shapiro, and Young 2005) that show no significant effect of governance (as measured by a composite index) on long term stock return (Gupta et al., 2009) or on firm value (Klein et al., 2005).

A possible explanation for the absence of a positive relationship (or the absence of statistical significance of such positive association), is that either governance improvements have no information content or the improvement is irrelevant to investors. In which case, corporate governance does not matter to investors, or corporate governance is in equilibrium in that market, thus no effect is observed. Another hypothesis to explain the lack of significance of the governance score coefficient derives from the work of Klapper and Love (2004) and La Porta, Lopez-De-Silanes, Shleifer and Vishny (2000), as they show that the degree of investor protection varies from country to country. In countries with a higher degree of investor protection, where companies are required by law to comply with higher governance standards, investors do not distinguish between companies by their quality of governance but rather by other firm attributes.

Finally, our results corroborate the hypothesis proposed by Myers and Majluf (1984) that financial slack has value when future growth opportunities are present and financing is expensive and unavailable. Our sample covers the years following the financial crisis (2009-2012), which is a period characterized by an economic recession. After 2008, firms have accumulated cash as a hedging strategy against possible future shortages of capital when growth opportunities become available again, so they do not have to pass up positive NPV projects due to unavailability of cash. We also find evidence to support the transaction costs motive for holding cash, as the sample firms

have systematically reduced the payment of dividends (the average change in dividends paid to equity is -0.15% with a standard deviation of 2.64%). It indicates that they prefer to reduce the distribution of cash to shareholders (i.e. via dividends) to raise new capital at a higher cost in the next period.

V. Conclusion

Our objective with this paper was to analyze the effect of CSP on the value of cash holdings, as measured by investments in Environmental, Social and Governance (ESG) practices. Our setting is a sample of 201 Canadian publicly traded firms for the period of 2009-2012. We use the value of cash to gauge the effect of CSP on CFP because cash is the asset that is more vulnerable to potential misuse by managers, for its liquidity and discretionary nature. Moreover, north American firms have accumulated increased amounts of cash in the last decade, with some important economic implications, for instance the amount of cash held by US corporations represent approximately 33% of its Gross Domestic Product (GDP)[5]. Canada experiences a very similar situation with companies holding $600 billion in cash in 2012, which represents 32% of the Canadian GDP[6]. If companies have accumulated cash in an unprecedented way, it is conceivable to assume that part of this cash will be used for investments in either value-enhancing or value-destroying activities. For this reason, we use ESG scores to measure the "quality" of firms' investments in ESG practices and ultimately their CSP.

Our results show that the value of an extra dollar of cash accumulated by firms with superior CSP (as measured by the Sustainalytics score) is higher than in forms with low CSP. The same dollar

[5] US GDP in 2011 was $14.99 trillion and cash holdings were estimated at $4.97 trillion.
[6] RBC Global Asset Management estimate by chief-economist Eric Lascelles (http://www.canadianbusiness.com/economy/dead-money/)

of cash in two otherwise identical firms (both with average cash holdings of 10.4% and average leverage ratio of 20.9%) is valued at a premium of 13 cents in the high CSP firm. These results show evidence to support the stakeholders theory and the resource based view, as companies that accumulate cash to invest in ESG are creating the so-called "good management" and acquiring resources that are unique and hard to imitate, which creates a sustainable competitive advantage. Most importantly, our study reports evidence that the market is paying a premium for companies that invest in ESG initiatives and present superior CSP (rank higher in the ESG scores).

Our study contributes to the literature on the value effects of investments in ESG by showing that the same dollar of cash is more valuable in firms with higher standards of ESG practices than in firms that either have lower ratings or do not invest in these initiatives. This study expands the literature on cash holdings and on corporate social performance by providing empirical evidence on the value shareholders attribute to the marginal value of cash for companies with different standards of ESG practices. Moreover, it shows that in the post-financial crisis context where our study is conducted, investors pay a premium for liquidity, evidence that the benefits of holding cash when future growth prospects are good, capital availability is restricted, and the cost of new issues is expensive, compensate for the agency costs associated with holding higher levels of cash than that of its optimal level.

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