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ESG Investing: Conceptual Issues

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Abstract

Using criteria based on environmental, social and governance (ESG) considerations has become an increasingly important aspect of investment decision making, particularly for high profile institutional investors. As of 2019, sustainable assets under management were estimated to be $30 trillion worldwide. The claim here is that the enthusiasm for ESG investing has been exaggerated for three reasons. First, it is not clear what constitutes an ESG investment in the context of a complex, integrated economy. Second, the impact on investment performance of a preference for ESG investments has not been sufficiently recognized outside academic circles. Finally, many leading practitioners have stated that the importance of ESG considerations implies the corporate objective of maximizing shareholder value, which lies at the core of much of finance theory, is outdated and needs to be replaced by a more comprehensive stakeholder model. The conclusion is that both the benefits of the traditional model and the dangers of a broader stakeholder model have not be adequately appreciated.

Introduction

Using criteria based on environmental, social and governance (ESG) considerations has become an increasingly important aspect of investment decision making, particularly for high profile institutional investors. Bloomberg reported on February 8, 2019 that Europe alone has "some $12 trillion committed to sustainable investing." Fish, Kim and Venkatraman (2019) state that sustainable assets under management worldwide were approximately $30 trillion by 2019. Matos (2020) reports that signatories to the Principles of Responsible Investment accounted for more than $80 trillion of AUM worldwide by the end of 2019. Despite its large and growing popularity, there are a number of important conceptual issues related to ESG investing that are not often appreciated. The purpose of this paper is to highlight and review those issues.

This paper focuses on the environmental (E) part of ESG because it is the most clearly defined. Nonetheless, virtually all of the analysis applies to the social part as well. Bundling governance, a measure that has historically been defined in terms of responsiveness of managers at publicly traded companies to their shareholders with environmental responsiveness and social consciousness, two concepts that often require managers to put the interests of other stakeholder groups ahead of shareholders, seems misplaced. It may be that the governance that is incorporated in the ESG concept is different from the conventional governance measures, but if it is, any references to the payoff to good corporate governance should be not be part of the ESG, because it represents a mindset diametrically opposed to the stakeholder value mindset that underlies ESG. For these reasons, an analysis of governance is not presented here.

The first issue is defining exactly what is meant by ESG. The following section, turns to the potential impact of applying ESG criteria in investment decision making on portfolio performance. The fourth section addresses the more fundamental question of whether ESG considerations imply that the corporate objective used in finance theory of maximizing shareholder value should be abandoned in favor of a more comprehensive stakeholder model. It also includes a discussion of the role of disclosure. The final section summarizes and concludes.

What constitutes an ESG investment?

The starting point for ESG investing is determining what constitutes an ESG investment. It turns out there are a large number of organizations attempting to answer that question. Li and Polychronopoulos (2020) report that as of year-end 2019 they had identified 70 different firms that provide some sort of ESG rating. Furthermore, they note that this does not include the multitude of investment banks, government organizations and research organizations that conduct ESG-related research that can be used to create customized ratings. Fish, Kim and Venkatraman (2019) document that more than 600 ESG ratings were produced in 2018.

This problem would not be so bad if all the ratings were effectively similar, but this is not the case. There is a substantial literature documenting the divergence of ESG ratings for the same firms which includes Berg, Koelbel, and Rigobon (2019), Chatterji, Durand, Levine, and Touboul (2016), Dortfleitner, Halbritter, and Nguyen (2015), Gibson, Krueger, Riand, and Schmidt (2019), Semenova and Hassel, (2015), and Li and Polychronopoulos (2020). The rating organizations differ not only in how to measure the various ESG criteria, but also with respect to what criteria are deemed worthy of measurement. In some cases, the

criteria are so numerous that it is difficult to separate those that are germane from those that are not. For instance, Bloomberg's ESG data covers 120 environmental, social, and governance indicators. Nonetheless, virtually all the raters include the most highly publicized indicators in their ratings. These include carbon emissions, climate change effect, pollution, waste disposal, renewable energy, discrimination, diversity, community relations, human rights, and independent directors. But they still fail to agree on how these indicators are to be measured. All of this is exacerbated by the integrated nature of the U.S. economy. For instance, should a firm that provides software to optimize the efficiency of oil refineries be considered to be high or low on and ESG scale?

To proceed to address other issues, it is assumed that the issue of deciding what constitutes an ESG investment has been unambiguously resolved. As the foregoing implies, however, this is quite a heroic assumption.

ESG preferences and expected returns

There is one result from basic valuation theory that is worth reiterating in order to avoid future confusion. It starts with the observation that in a reasonably efficient market the value of a company's equity equals the present value of the expected free cash flows to equity as given by equation (1). In equation (1), X is the cash flow to equity, k is the

$$P_0 = \frac{E(X_1)}{(1+k)} + \frac{E(X_2)}{(1+k)^2} + \cdots + \frac{E(X_n)}{(1+k)^n} + \cdots \quad (1)$$

discount rate, and E is the expectations operator. From equation (1) it is straightforward to show that the expected return, E(R), is given by equation (2). The important point to

$$E(R) = \frac{E(P_1) - P_0 + E(X_1)}{P_0} = \mathrm{k} \quad (2)$$

remember is that the valuation equation (1) necessarily implies that the expected

return equals the discount rate as shown in equation (2) independent of the cash flow forecasts.

Fama and French (2007) develop a simple framework that can be applied to determine how investors' preferences for green companies affect expected returns. They show that when utility functions for at least some investors include variables other than future consumption, prices deviate from the standard predictions of conventional risk and return models. In particular, if a subset of investors prefers to invest in green companies, the expected return from investing in companies that are greener will be lower, with the magnitude of the effect depending on how much money they have to invest. With upwards of $30 trillion of investment being affected by ESG considerations, the price impact is likely to be material. A more recent and detailed model developed by Pastor, Stambaugh and Taylor (2020) reaches the same conclusion that if investors prefer green companies the risk-adjusted expected returns on those companies well be less in equilibrium.

As an illustration of this effect, Hong and Kacperczyk (2009) and Dimson, Marsh and Staunton (2015, 2020) study what they call "sin" stocks, i.e., companies involved in businesses such as producing alcohol, tobacco, and gaming. They hypothesize that these are stocks for which investors have negative tastes. Consistent with Fama and French's theory, both groups of authors find that sin stocks are less commonly held by institutions and that they have higher average returns than otherwise comparable stocks. They conclude that investors must be compensated in terms of greater expected return for the reputational cost associated with holding sin stocks. Note that lower pecuniary risk-adjusted returns on ESG stocks does not mean that the "total" returns are less. For investors that have a preference for ESG, holding high ESG securities results in a non-pecuniary benefit from investing in what

they think are worthwhile projects. Where things get sticky is in cases where an intermediary, such as a pension fund, makes decisions for a large group of investors that have diverse preferences with respect to ESG characteristics.

Theoretical results in the spirit of Fama and French are based on the assumption that the market is in equilibrium. But concern over ESG is a relatively new phenomenon coming to the fore during the past 10 years or so. Therefore, it is possible that during this period market prices have been adjusting to a new equilibrium that reflects ESG considerations. As the market adjusts to incorporate ESG information, and assuming that the information is material to investors, the discount rate for highly rated ESG companies will fall and the discount rate for low rated ESG companies will rise. Due to the changes in the discount rates, equation (1) implies that the relative prices of highly rated ESG stocks will increase and the relative prices of low ESG stocks will fall. Consequently, during the adjustment period highly rated ESG stocks will outperform the low ESG stocks, but that is a one-time adjustment effect. Once prices reach equilibrium, the value of high ESG stocks will be greater, as given by equation (1), but the expected returns they offer will be less as given by equation (2). This adjustment process means that the measured performance of stocks as a function of their ESG rating will depend on the sample period. If the sample is drawn from a time period during which the adjustment is underway, highly rated ESG stocks are likely to be found to outperform and the reverse for low ESG stocks. On the other hand, if the sample is drawn from a period after which the adjustment is complete, highly rated ESG stocks should be observed to have lower average returns. This, along with the difficulty of defining exactly what constitutes an ESG investment, offers an explanation as to why reported results regarding the performance of ESG focused portfolios are so heterogenous. For instance,

Khan (1019, Morningstar (2019), Winegardern (2019), Glossner (2017), Nagy, Kassam, and Lee (2015), Barber, Morse, and Yasuda (2018), Li and Polychronopoulos, (2020) and Fish, Kim, and Venkatraman (2019) report somewhat differing results regarding whether taking account of ESG characteristics adds alpha. An extensive review by Matos (2020) reports similarly ambiguous results.

There is one possible way that investors can benefit from the adjustment period, but it requires active engagement. As described by Gollier and Pouget (2014), large investors can potentially following a "washing machine" strategy by establishing a significant position in "bad" ESG companies. They then actively engage with the goal of inducing management to change its ways and become more green. If they are successful, and if that success leads to a drop in the discount rate because the company is greener, they can then sell the shares at a profit.

Finally, if the ESG criteria are considered to be hard constraints, they must have a downward impact on investment performance compared to unconstrained investment portfolios. After all, an unconstrained investor can always choose to hold an ESG constrained portfolio, but the reverse is not true. In addition, adding constraints limits portfolio diversification which will negatively impact the risk-return tradeoff.

The good side of the lower expected returns is an increase in the value of greener companies because of the lower discount rate. As Pastor, Stambaugh and Taylor (2020) show, this has two desired social effects. First, firms choose to become greener because greener firms have greater market value. Second, investment shifts from toward greener firms because of their lower cost of capital.

Does "greenness" affect expected cash flows?

To this point, it has effectively been assumed that expected cash flows were constant. It is possible, of course, that movement toward more sustainable technology could impact future cash flow. For example, in his letter to CEOs on social responsibility, Larry Fink (2020) asserts that "*a company's prospects for growth are inextricable from its ability to operate sustainably and serve its full set of stakeholders.*"

There are actually two questions here. First, does being more sensitive to ESG factors help a company increase cash flow? Second, how does the increase in cash flow affect investors in both the short-run and in long-run equilibrium. With regard to the first question, Cornell and Damodaran (2020) present a detailed analysis of both the theoretical issues and the empirical findings. The bottom line is that the results are at best ambiguous. The theory suggests that being "greener" may or may not improve cash flow, it depends on the facts and circumstances of each individual company. The empirical findings are consistent with this. There is no clear evidence that higher ESG ratings are associated with improved cash flow. Furthermore, as Cornell and Damodaran (2020) note, a causality issue arises when considering the relation between greenness and cash flow. In particular, causality may run from performance to a higher ESG rating because companies that are doing well are in a better position to spend money being socially responsible. In this respect, ESG spending can be thought of as a luxury good that successful companies buy to embellish the reputation of management.

Cash flow and equity returns

Assuming for the sake of argument that added focus on ESG leads to higher cash flow, how does that help investors? The answer is that depends on when the funds were invested and whether the market is in equilibrium. To work backward, once the market is in

equilibrium equation (2) shows that greater cash flow will have no impact on investor expected returns as long as expectations are rational, and the basic valuation equation given by (1) holds. Although improving cash flow raises corporate value, and is therefore beneficial to the company, it does not improve investor expected returns unless it also reduces the risk associated with the cash flow stream. However, once again there is the possibility of a different result during a transition period. When the market begins to realize that moving to a greener policy will improve cash flow, value increases and investors holding the stock earn excess returns. Once the adjustment is complete, however, the future expected returns will revert to the level given my equation (2). On a positive note, the washing machine strategy described previously can also lead to superior returns for active investors who induce a company to changes its ways, assuming that those changes lead to improved cash flows. Once again, though, the superior returns are earned only during the adjustment period when the market is reacting to the increase in expected cash flows.

Green bonds

Thus far, the analysis has focused on equity. However, in recent years there has been increasing attention paid to "green bonds." Corporate green bonds are bonds whose proceeds are committed to finance environmental and climate-friendly projects. A question that arises immediately is why a company would ever want to issue such bonds. By forcing itself to use the proceeds in a specific manner, a company loses the flexibility to employ the funds in a more general manner if circumstances change. Furthermore, if the green purpose is the best use of funds then monies raised from generic bonds can always be devoted to green projects.

As noted by Flammer (2020), there are three rationales that have been put forward to explain why companies issue green bonds. First, green bonds may serve as a credible signal

of the company's commitment towards the environment. Second, issuing green bonds could be a form of public relations greenwashing. Third, if investors are willing to pay more for green bonds, then the company should be able to issue them at a lower yield. This is the bond version of the lower cost of equity. Unlike equity returns, however, bond yields are directly observable making it easier to assess whether being green is important enough to investors to accept lower yield. Empirical research by Zerbib (2019) finds that yields on green bonds are nearly identical to yields on otherwise comparable non-green bonds. This suggests that much of the green focus may indeed be related to public relations.

Equity Value Maximization and ESG

With regard to corporate management, the ESG movement has gone beyond analysis of investor concerns to call into question the value equity maximization objective that lies at the core of much of finance theory. To be sure, some of the criticism is misdirected in that it confuses value maximization with short-term profit maximization. If a company fails to treat its customers or employees properly, or if ignores the impact of its operations on society and the environment, future cash flows, and thereby equity value, are likely to be negatively impacted. As a result, there may no need for a broader corporate objective in order to meet social goals. However, sophisticated executives, who no doubt understand the foregoing distinction, have come out strongly in favor of a broader corporate objective. Most notably, the Business Roundtable (2019) statement signed by numerous leading CEOs recently stated, in a document that repeatedly stressed the importance of all stakeholders, "*Each of our stakeholders is essential. We commit to deliver value to all of them, for the future success of our companies, our communities and our country*." Similarly, in his letter to fellow CEOs, Blackstone chairman Larry Fink put the matter this way, "*A company cannot*

achieve long-term profits without embracing purpose and considering the needs of a broad range of stakeholders." As observed above, that statement, as far as it goes, is in no way inconsistent with an objective of value maximization. But Fink goes on to say, "*We will be increasingly disposed to vote against management and board of directors when companies are not making sufficient progress on sustainability-related disclosures and the business practices underlying them.*" That quote clearly seems to go beyond value maximization to say that companies should have specific sustainability objectives. To investigate this critical issue further, it is useful to develop a simple thought experiment

Sustainability and corporate objectives: A thought experiment

Imagine a company, like Grubb Hub, in the business of food delivery. The ESG related question for this business is whether to use gas or electric powered delivery vehicles. The company has an algorithm for calculating the all-in levelized cost of operation for both types of vehicles. The question is whether or not management should use the maximize shareholder value objective criterion or employ a wider objective that takes account of sustainability as Mr. Fink suggests. In this simple thought experiment, the only question is whether to use gas or electric powered delivery vehicles. The electric vehicles are assumed to be superior from the standpoint of reduced emissions and sustainability. To address this question, it is useful to consider three cases.

In the first case, the electric vehicles are less expensive. In this situation, both the maximization of value and the broader sustainability objective have the same implication. The electric vehicles are chosen in both scenarios. There is no need for a broader sustainability objective.

In the second case, the gas vehicles are less expensive in spite of the fact that the government has levied a carbon tax that reflects the social costs of burning gasoline. The tax is assumed to accurately price the externality. In this scenario, the value maximizing solution and the broader sustainability solution are again the same. The gas vehicles should be selected. This is because they are less expensive even after taking account of the social cost of burning fossil fuels. The company can simply take prices as given and maximize value, knowing that this is socially optimal, because the externality is priced. Switching to electric cars would reduce the social costs of emissions, but it would increase social costs due to higher prices paid by customers and lower compensation received by employees and shareholders. What market prices are telling management is that those other social costs outweigh the benefits of reducing emissions.

The third case is the difficult one. The gas vehicles are less expensive but that is due, in part, to the failure of the price of gas to reflect the social costs of emissions. How should the company take account of the benefits of reduced emissions associated with the electric vehicles? What costs should be imposed on shareholders, employees, and customers in the name of promoting the social benefits of sustainability? Even more fundamentally, why should corporate managers be making such social decisions? If the concern is that public policies fail to take account of the social costs associated with the consumption of fossil fuels, that points to a problem with government policy. Is it the role of corporate managers to try to offset perceived governmental failure by making their own social policy? Such an undertaking is particularly worrisome in light of the fact that within a diverse society like the United States there are large groups of people who think that current policies are too lax, too stringent, or just about right, when it comes to fossil fuel production and usage. Is it

appropriate for company executives, who have been neither elected nor empowered to make social decisions, to decide that the prices of fossil fuels are not appropriate indicators for making corporate decisions because the government has failed to enact the proper policies to account for externalities? What if different corporate managers have markedly different information or different opinions regarding the extent of the externalities? Given all of these problems, Milton Friedman's thesis that *"There is one and only one social responsibility of business–to use it resources and engage in activities designed to increase its profits so long as it stays within the rules of the game, which is to say, engages in open and free competition without deception or fraud"* has much to recommend it. To extent the corporate leaders like Mr. Fink believe that companies that follow Friedman's advice are not giving enough weight to sustainability by taking market prices as given, Mr. Fink and his supporters are effectively saying that current public policy is wrong. The solution to that problem is not to make corporate executives de facto public officials, but for people, including Mr. Fink, to elect officials that will enact the proper polices to take account of externalities. With proper policies, such as a carbon tax, in place, case three reverts to case two and companies can return to following Friedman's dictum.

It is worth noting that the same issues arise with respect to investment firms as with corporations. Should institutional investors be using ESG related information in making investment decisions? The answer is a simple yes if it assumed that they have reason to believe they can increase risk-adjusted expected returns by so doing. Unfortunately, as discussed earlier, placing ESG constraints on investment decision making is almost certain to reduce risk-adjusted returns. In that case, should institutional investors be willing to forego return that would benefit their clients in order to affect social policy? Many universities have

answered that question yes, by choosing to divest holdings of all fossil fuel related stocks. As was the case with corporate executives, this raises the question of why financial professionals, who have not stood for election nor been appointed to a public body, should be making decisions regarding social policy at the expense of the parties whose funds they are investing. Once again, the analysis presented here implies that a more proper approach for concerned investment firms would be to attempt to improve public policy rather than taking public policy into their own hands, possibly at the expense of their clients, by constraining their portfolio holdings. With proper public policies in place, institutional investors can go about their appointed business of attempting to maximize risk-adjusted returns.

Disclosure issues

Thus far, the analysis has dealt with corporate policies, but the Financial Times (2020) reports that while 2020 was a record year for environmental and social petitions most of them were related to proposed alterations of disclosure policies, not operating policies. Disclosure is less controversial. If shareholders, regulators, and other stakeholders have more information, presumably better policies can be made, and better decisions can be taken all the way around. However, there is a trade-off, particularly with respect to environmental issues. In a complex, integrated economy assessing the environmental impact of economic activity is nuanced. For example, if Tesla buys batteries from a Chinese manufacturer to put in the cars the company manufactures in Shanghai, does it need to disclose the carbon footprint of the batteries? This question is further complicated by the fact that it depends on the source of power used in the manufacture of batteries which is an energy intensive process. In China, a majority of the electricity used in battery manufacturing comes from coal fired power plants with a high carbon footprint. Does Tesla have to take account of all

of this in its disclosures? Sorting out details such as these is likely to be expensive and time consuming. It also runs the risk of being misleading if the calculations behind the disclosures are not spelled out. However, barraging investors with pages and pages of complex environmental analysis could potentially be more misleading than helpful. In short, the issue of deciding what to disclose and how to disclose it is far from resolved. To make matters worse, climate science and the economic analysis of the impact of climate changes, are both evolving rapidly. As more is learned, the determination of what is material to disclose to investors is likely to change.

Finally, whereas major companies like Tesla have the resources to respond to complex environmental disclosure requirements, the cost, in relation to revenues, could be exorbitant for many small companies. How disclosure requirements should be balanced with these costs as a function of the size of the company is another issue that if far from resolved.

Summary and conclusions

The analysis presented here implies that although ESG considerations, particularly environmental concerns given the global impact of climate change, are critical social issues does not mean they should play a meaningful role in investment management or become part of corporate objective functions for a variety of reasons. First, in a complex, integrated economy, it is not at all clear how companies should be rated in terms of ESG. Currently, there are a wide variety of confusing and sometimes contradictory criteria. Second, if a significant fraction of investors has a preference for green stocks that will depress the expected returns on those stocks in equilibrium. However, during the adjustment period when the expected returns on green companies are falling, the realized returns will be higher. This makes it difficult to interpret empirical studies that report historical returns on ESG

focused portfolios. The offsetting good news is that the lower equilibrium expected returns and the related greater corporate values encourage companies to invest in green technologies. Third, and most generally, concerns over environmental and other social issues has led many corporate leaders to argue that the corporate objective of maximizing shareholder value is outdated. The analysis presented here suggests that this is not the case. In fact, having corporations pursue broader social goals such as sustainability comes with significant dangers. If the problem is that public policies are deficient for reasons such as failing to price the externalities associated with the exploitation of fossil fuels, the solution is to change those policies not empowering corporate executives, who have not stood for public office, to set their own agendas with shareholder financing. Developing the proper policies to cope with and manage climate change is an immense social issue of tremendous importance, but it is not one that should be handed over to corporate executives or investment managers.

Finally, while disclosure of more information regarding the environmental impact of a company's operations should potentially be of benefit to shareholders, regulators and other corporate stakeholders, deciding what to disclose and how to disclose it is a thorny issue, particularly in light of the costs it will impose on companies. The complexity of deciding on what to disclose is compounded by the fact that both climate science and the economic analysis of the impact of climate change are rapidly evolving fields.

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