Analysis

ESG
A new equity factor

Nykredit
asset management

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Abstract

We have analyzed a large database with ESG ratings and have found that since 2012, ESG has become a priced factor in equity markets. Thus, companies with higher ESG ratings have outperformed companies with lower ratings. Below, we discuss the results and conclude that it is likely that the impact of ESG ratings is here to stay.

1 Introduction

Environmental Social Governance

ESG means Environmental Social Governance. It is a direction in sustainable investment which we have described earlier.[1] Back then we analyzed the relationship between risk and return for equity portfolios with distinct ESG ratings during the period 2006-2011. Similarly to a number of other analyses we found that there was no reason to expect that investing in highly ESG rated companies was worse than investing in companies with a low ESG rating, so sustainable investment did not represent a cost on average. Similarly, we found that sustainable investment did not enhance returns.

New data set: ESG pays off

Now, we have had access to an updated data set, covering the period 2007-2013, and we have repeated the analysis. The conclusions are quite different: We find that sustainable investment has resulted in excess returns during 2012-2013. We also find that the higher the ESG rating, the higher the average return. As we shall discuss below, ESG appears to have become a priced equity factor.

We shall first briefly sketch how ESG ratings are arrived at in the MSCI Intangible Value Assessment Model. Next, we present the risk/return results. This is followed by a discussion of whether the results can be expected to be upheld in the future. Appendix A gives some statistics on data. Appendix B contains the Brundtland report definition of sustainability. Appendix C gives some theoretical considerations behind ESG factors and risk/return.

[1] Bæredygtig investering, juni 2013. In Danish.

2 The ESG rating process

Individual company analyses

MSCI's Intangible Value Assessment (IVA) database builds on individual company analyses by sector (GICS). Every sector has its own indicators, distributed on E (Environment), S (Social), and G (Governance). These are selected once annually based on a particular analysis of the risks and opportunities that affect each sector. Every company analysis is updated once annually, but when special events affect the company or the sector, the update occurs earlier.

The analyses primarily use raw data describing the company behavior. Certain policies must be in place, but it is the company performance on certain key figures relative to the sector that leads to the specific rating. The basis is always publicly available data.

Improvements

The method has been continuously fine tuned. Key figures have been replaced, and their number have grown. Also updates happen more frequently. Governance plays a larger role. Systematics have been strengthened since 2011 at the same time as the number of rated companies has doubled. In 2013 MSCI began collecting data directly from the companies if they are not publicly available. Primarily this meets the needs of smaller companies that have historically been less efficient in reporting ESG criteria. Figure 1 gives an overview of the criteria. Notice that the rating is always relative to the sector of the company.

MSCI's IVA database is just one of some ESG databases. At present there is a small handfull of such databases. Since they all measure ESG criteria, many of the measurement points are duplicated but MSCI is distinguished by generally having fewer measurement points and more stringent systematics in selecting and updating them. This is the reason why Nykredit Asset Management uses this database.

3 Analysis results

Method

In order to analyze returns as a function of ESG rating, we find those companies that have a given rating at any point in time. This happens monthly from January 2007 to December 2013, and every month we form an equally weighted portfolio of companies falling into each given rating class. Over time, each portfolio will change as a consequence of rating changes. Next we compute total returns for each portfolio and compute portfolio wealth as a function of ESG rating.

2007-2013: No clear effect

For the whole period, portfolio wealth is shown in figure 2. It appears that there is no clear effect from having investing in a particular rating class. That is also confirmed by table 1, showing annualized returns and standard deviations for each rating portfolio. This apparently confirms our earlier findings that sustainable investment does not cost nor contribute.

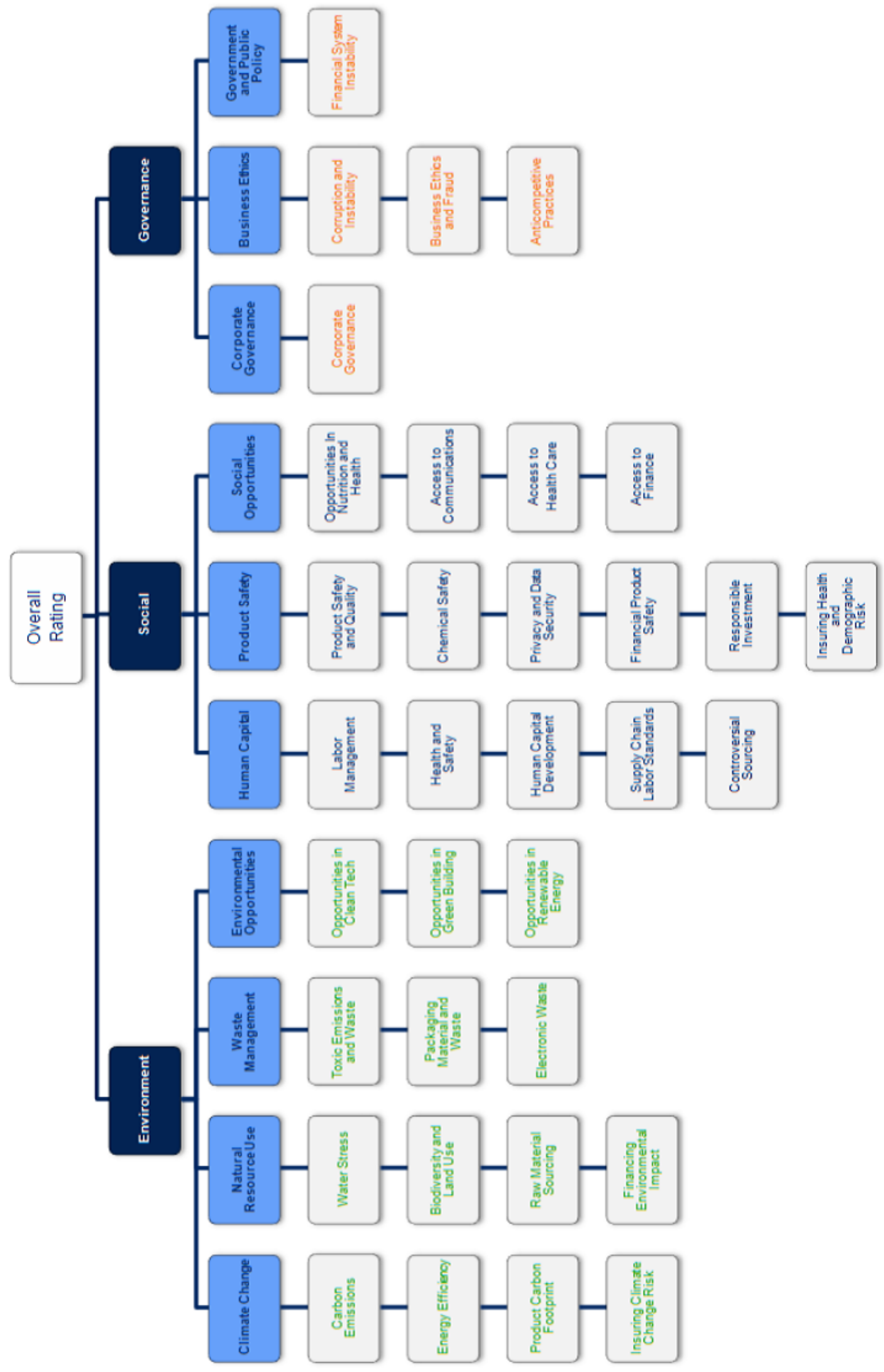

Figure 1: Overview of MSCI's rating criteria.

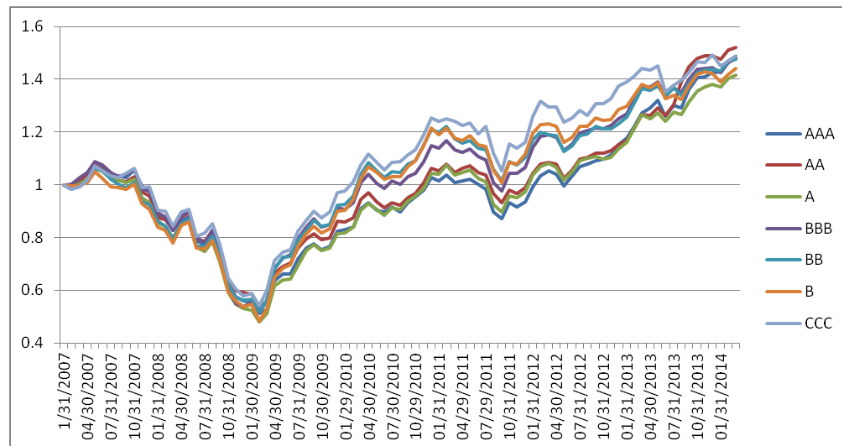

Figure 2: Wealth development for equally weighted rating portfolios, 2007-2013.

Rating	Return % p.a.	Standard deviation % p.a.
AAA	5.69	16.70
AA	6.03	16.11
A	4.99	17.15
BBB	5.61	17.93
BB	5.58	17.04
B	5.24	18.26
CCC	5.72	17.65

Table 1: Returns and risk for equally weighted rating portfolios, 2007-2013.

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2012- : ESG is rewarded

However, it is interesting to focus on the last couple of years, 2012-13, the two years that were not part of our earlier analysis. For this period, different and clearer results emerge. Figure 3 shows the wealth development from January 2012 to April 2014 for each portfolio. AAA investment has been better than AA investment, which has been better than A investment, etc. B and CCC investment have performed equally well. This is also seen in table 2. This results indicate that since 2012, ESG has been a systematic equity factor. Sustainable investment has not only been "feel-good" but has revealed itself in bottom lines.

3.1 ESG in portfolios of quality companies

Global Fokus Stocks use ESG actively

At Nykredit Asset Management we use ESG actively in several equity portfolios. An example is Globale Fokusaktier (Global focus stocks). This portfolio is constructed by selecting about 35 equities that have been analyzed to be the best in a universe of quality stocks.

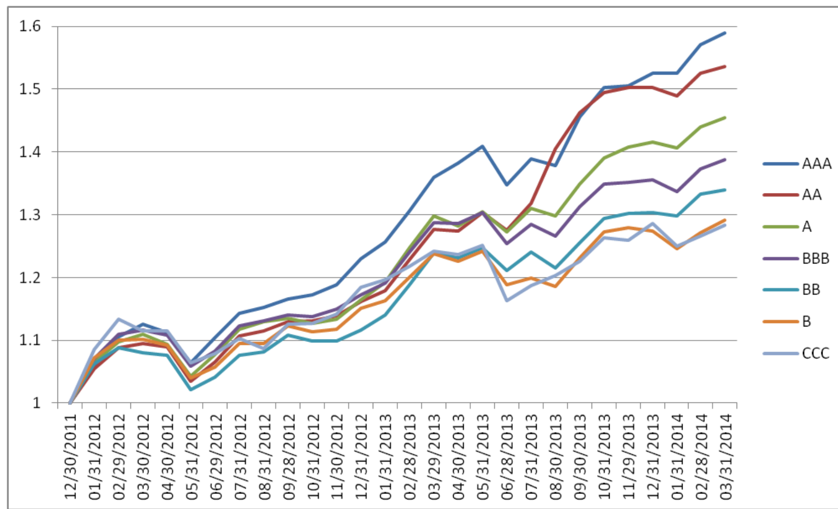

Figure 3: Wealth development for equally weighted rating portfolios, 2012-13.

Rating	Return % p.a.	Standard deviation % p.a.
AAA	22.87	8.62
AA	21.00	8.31
A	18.11	8.31
BBB	15.67	8.40
BB	13.85	8.34
B	12.05	8.83
CCC	11.71	10.09

Table 2: Returns and risk for equally weighted rating portfolios, 2012-13.

The universe of quality stocks is found by screening for certain criteria among all stocks. The criteria are quantitative and comprise these:

- The market cap must be large enough to allow trading to take place without price impact
- The companies must not be too indebted or leveraged
- They must have a high and stable return on invested capital (ROIC)

Subsequently, the universe is analyzed using a number of quantitative and qualitative parameters, and ESG ratings are one of these parameters. It is an important hypothesis in the portfolio concept that companies that behave socially responsibly and think sustainability will both be able to reduce future risks and exploit future potential.

Analysis for quality portfolios

Since this mixture of quantitative parameters and judgement is typical of many actively managed portfolios it is of interest to see whether ESG considerations can contribute to quality portfolio performance. In order to examine that we have mimicked the above procedure on an annual basis. First, we have screened for quality stocks every year since 2007. This gives us the investable universe every year. Next we select the stocks in the universe that have a AAA-, AA-, etc. rating. Every year, we put together an equally weighted portfolio by rating of these.

Compensation for rating changes

As shown in table 7 in appendix A, some companies will have a new rating within a year. On average, the changes are not dramatic, but we partially compensate for the effect by looking at portfolios of quality companies rated AAA-AA, A-BBB, BB-B, and CCC.

ESG can create value

The wealth development for these portfolios is shown in figure 4. It is seen that choosing highly rated companies can improve quality portfolio performance whereas CCC rated companies can be eliminated with an average profit.

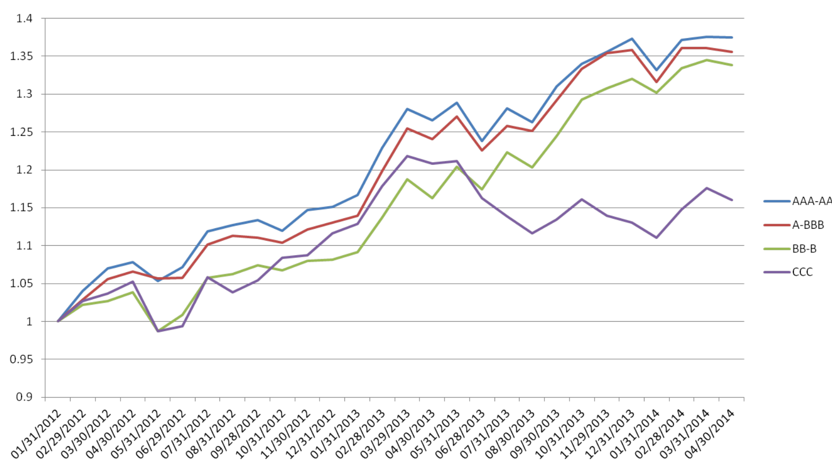

Figure 4: Wealth development for equally weighted rating portfolios of screened quality companies, 2012-2013.

4 Why an ESG factor?

It is interesting to consider why ESG has been priced in the market since 2012. It is of particular interest to consider whether the tendency can be expected to continue. We shall first examine if there are particular biases in the rating portfolios that can explain the phenomenon, and next seek other explanations.

4.1 Sectors, geography, size

Table 3 shows the rating portfolio sector compositions as of December 2013. It appears that there are no systematic tendencies that explain the different portfolio performances.

Sectors do not explain the effect

Sector	AAA	AA	A	BBB	BB	B	CCC
Consumer Discretionary	13,9	17,3	14,3	14,4	11,0	14,4	12,4
Consumer Staples	3,2	5,9	6,5	5,8	5,9	6,2	8,1
Energy	5,4	4,0	4,4	8,1	9,3	10,2	8,4
Financials	30,5	18,0	14,2	22,6	25,3	17,0	16,0
Health Care	3,4	9,2	8,9	8,9	8,3	5,9	2,7
Industrials	17,3	21,5	18,5	13,1	13,7	13,1	14,0
Information Technology	8,9	9,8	13,9	12,4	12,4	10,7	4,8
Materials	11,8	7,6	9,4	8,2	8,1	15,7	24,7
Telecommunication Services	1,6	2,4	4,5	2,8	1,9	2,3	2,8
Utilities	3,9	4,3	5,5	3,9	4,1	4,4	6,0

Table 3: Rating portfolio composition by sector, December 2013.

Table 4 shows the portfolio's geographical composition. At first sight it may appear that the differential portfolio performance mey be explained by the falling share of Western European and the rising share of North American companies in the portfolios as ratings fall. However, the two areas have done equally well from 2012, and their total share of the portfolios is roughly constant across ratings. Hence, geography does not seem to explain the results.

Neither geography nor size explain

Region	AAA	AA	A	BBB	BB	B	CCC
Africa / Middle East	4,9	3,2	3,6	4,2	1,7	3,0	2,8
Asia Pacific	21,8	24,5	21,3	23,0	14,3	31,0	35,7
Central Asia	2,7	0,2	0,9	3,1	1,1	2,5	7,5
Eastern Europe	0,0	1,1	0,8	1,1	2,0	2,4	3,7
North America	18,3	34,4	43,5	47,6	70,4	49,8	41,9
South & Central America	0,9	2,3	2,4	2,9	1,7	3,1	2,2
Western Europe	51,3	34,3	27,6	18,1	8,8	8,2	6,3
North America+Western Europe	69,6	68,7	71,1	65,7	79,1	58,0	48,2

Table 4: Rating portfolio composition by geographical region, December 2013.

Table 5 shows the size distribution of the portfolios. The table shows that AAA is primarily large cap, whereas their share fall by lower rating. However, this can not explain the portfolio performances since small cap and mid cap have generally outperformed large cap since 2012. Figure 4 shows MSCI total return indices for large cap, mid cap, and small cap.

Market cap	AAA	AA	A	BBB	BB	B	CCC
Large Cap	61,0	48,2	41,3	38,5	23,3	33,3	41,9
Mid Cap	14,2	19,3	22,8	25,8	23,0	28,6	24,0
Small Cap	24,8	32,5	36,0	35,6	53,8	38,1	34,2

Table 5: Rating portfolio composition by market cap, December 2013.

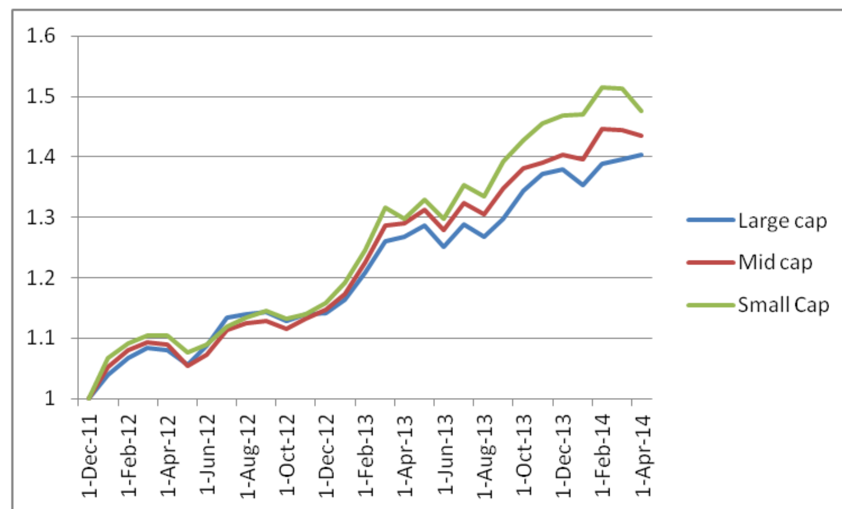

Figure 5: Wealth development for large cap, mid cap, and small cap, 2012-2014.

On this background it appears that ESG is different from traditional equity factors.

4.2 Other explanations

Maybe ESG captures risks and opportunities

Three other explanations present themselves. Naturally, the primary explanation is that ESG actually captures new information about the risks and opportunities that are related to company behaviour. An example of risk is the US fast food chain Yum Brands, which received the lowest (CCC) rating during the analyzed period. One reason was bad management of food safety. As the company was involved in a Chinese food scandal in December, 2012, sales were heavily hit, and the stock still lags the other US equities after a problematic year. An example of opportunities is Schneider Electric, which has received the highest (AAA) rating during this period, in part because of company focus on the opportunities in clean-tech. As China put new emphasis on pollution as a major

problem for society in the fall of 2013, Schneider Electric saw larger demand. The stock has systematically outperformed the market for the past two years.

These are just two examples of how ESG information has materialized in financial results for the past two years. The reason why it materialized just now could be the continual improvement of the database data and method. In both 2009 and 2011 the rating systematics were strengthened. Better data have become available. Companies publish more standardized ESG data. Often, these are even audited.

At the same time company behaviour is increasingly covered by independent media and NGOs which strengthens alternative contributions to data. Organizations systematically collect key data. Sector standards for sector specific key figures are also becoming more common. In addition, MSCI is continuously improving quality control of data and relevant measurement points for individual sectors; the internet continues to expand knowledge of problematic cases; and regulation gets tougher and fines are increased, in particular for corruption. How this impacts individual companies requires further analysis outside the scope of this publication.

Increased database coverage

A second explanation could be the increased database coverage. Not only the method has been developed further, the coverage of markets has broadened, and as a result the number of analyzed companies has increased substantially.[2] During the past two years the number of company analyses have more than doubled. Not only does this mean a better coverage of the market, it also means that tilts toward developed markets and large cap companies are diminishing. In addition, overall tendencies should become clearer with more observations, all things equal, in particular in an area where methods are permanently improved and refined, and where no one can be assumed to have full information. The aim is to be more and more precise but the analysis can presently not be precise every time. With the increasing number of observations we see tendencies clearer, and it makes more sense to use the database. However, the importance of variations within rating categories and of the tilts still present in the database require further analysis.

Increased usage among investors

A third explanation is the increased usage of ESG among investors. The two largest networks for responsible investors, UN PRI and Eurosif, report increasing investments within responsible investment, and in particular in integration of ESG criteria in the investment process. As more investors recognize that information about company ESG performance is relevant when evaluating existing and new investments the pricing will increasingly reflect ESG ratings. In other words, in line with ourselves, a larger part of the market realizes that this information plays a role in future stock performance. All things equal, this should mean a higher price for highly rated companies and a lower price for lowly rated companies. Against this speaks that there are several ESG databases in the market. These do not use exactly the same methods and do therefore not reach exactly the same

[2] See appendix A.

conclusions. We use the MSCI database, and this is one of the most widespread ESG databases in the market. We also do not know how investors apply ESG information in their specific investment processes, but investors apparently increasingly agree that ESG considerations should result in better performance, and it is to be expected that pricing changes when new information is thought to add value. Presently, the two largest networks collect statistics about the usage of ESG. When results are available we will analyze them.

5 Will ESG also be a factor in the future?

We expect that the impact of ESG will continue.

The method is continuously improved in order to find the most material ESG data, and the supply of data will be improved further. New sector standardized data will emerge, and the data validation work will continue. No doubt, the global coverage of ESG related issues will widen, both in relation to sectors and single companies.

Negative behaviour is costly

The risk that negative behaviour has consequences, not only as bad press but also in the shape of consumer reactions and share price drops, will only strengthen as internet and social media are further disseminated. Activism as was seen in connection with the tragic collapse of the clothes factory Rana Plaza in Bangladesh in 2013 is unlikely to be reduced. Therefore we expect that sloppiness or decidedly negative behaviour will be punished by the market to the extent that this behaviour is captured by the rating system.

Rewards for efforts

We also expect that company possibilities in addressing global issues will be rewarded in the coming years. The reason is that the global middle class continues to grow, and this does not only puts pressure on resources. It also presses for solutions of global issues since the populations will increasingly feel externalities.

More investors will use ESG

More and more investors, including Nykredit, are working to apply ESG ratings as an element in bond investment. This means that ESG ratings will have an impact on company funding costs, hence returns.

At some stage there will be a balance in the pricing such that the excess returns of highly rated companies relative to lowly rated companies is at some equilibrium level. However, given the development of methods and improvements of the level of information, it is our assessment that this balance has not yet been reached.

The usage of ESG ratings becomes more operational as the database is expanded in market coverage and depth.

Finally, we expect that the adoption of ESG criteria in the investment process will increase. Lately, the Norwegian government has announced that Norges Bank will strengthen the application of ESG in its management of its more than NOK 5,200 bn. fortune.

Presently much analysis of the impact of ESG is undertaken. The university world (eg., Oxford University) and investors (eg., Norges Bank) are active in this field. This considerable effort to better understand the relationship between ESG and returns is important. So far most ESG analyses have shown a weak relationship between risk and ESG. This was also our own findings until this study. Some studies have found some direct relationship to return, mostly when applying a quality filter in selecting the companies. However, the results presented above are the first time we have seen the clear relationship between ESG ratings and returns both with and without quality filters.

Appendix A: Data material statistics

Coverage

In total, the data material has a bit more than 216,000 observations. The development in the number of rated companies is shown in figure 6. It is clear that the company coverage has grown dramatically from the middle of 2012 and especially since November, 2012.

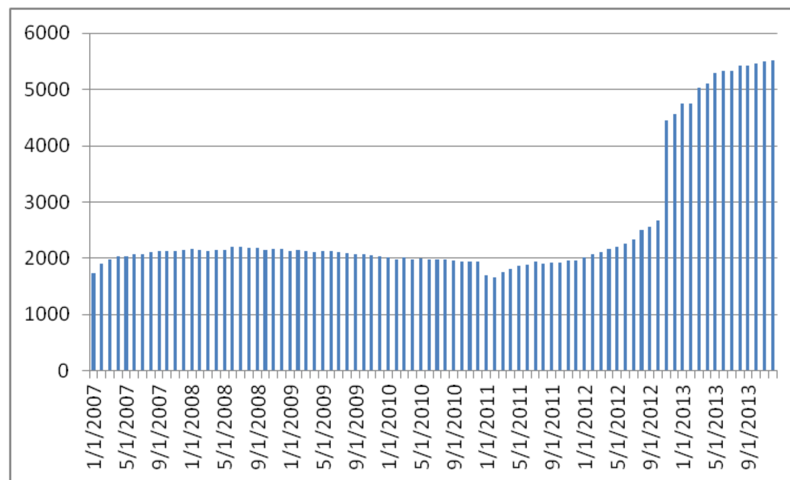

Figure 6: The development in the number of rated companies.

Rating distribution

For the whole data set the distribution of ratings is shown in table 6.

Rating	Percent
AAA	7.2
AA	10.6
A	15.4
BBB	21.5
BB	23.1
B	13.9
CCC	8.4

Table 6: The distribution of ratings, 2007-2013.

Transition probabilities

We have examined how fast rating changes are by comparing current rating and the rating 12 months later month by month in the data material. The result is summarized in table 7. The columns show current ratings, and the rows show the ratings 12 month later. It is seen that, on average, 70% of AAA rated companies continue to be AAA rated after 12 months whereas 18% become AA rated and 8% become A rated. Generally, it is clear that ratings are relatively persistent since most continue at the same level or are alternatively changed by a single notch.

	AAA	AA	A	BBB	BB	B	CCC
AAA	69.9	12.9	4.2	1.3	0.2	0.5	0.1
AA	18.1	56.2	14.2	4.4	1.5	0.8	0.3
A	7.7	18.5	56.2	14.7	5.7	2.9	0.9
BBB	3.0	9.6	17.0	58.7	19.5	9.1	4.2
BB	1.0	1.9	5.7	14.3	57.6	17.5	7.3
B	0.2	0.9	2.4	5.6	12.3	58.9	16.0
CCC	0.1	0.0	0.3	1.0	3.2	10.3	71.2

Table 7: 12 month transition probability matrix for ESG ratings.

As is seen in table 8 it is most likely that a company rating has changed after 24 months, except for AAA companies.

	AAA	AA	A	BBB	BB	B	CCC
AAA	51.2	15.5	7.4	3.2	1.4	1.2	0.6
AA	22.9	36.8	18.4	8.1	3 .9	2.5	1.6
A	14.2	26.2	34.1	18.9	11.9	7.2	3.6
BBB	7.6	14.9	23.5	38.1	27.5	14.0	11.3
BB	2.5	5.1	9.9	19.8	30.7	25.1	15.3
B	1.5	1.4	5.8	9.1	18.3	31.9	24.7
CCC	0.2	0.1	0.8	2.9	6.3	18.1	42.8

Table 8: 24 month transition probability matrix for ESG ratings.

Appendix B: The Brundtland report definition of sustainability

In December, 1983, Gro Harlem Brundtland became chairman of the UN "The World Commission on Environment and Development". The final report from the commision, named "Our Common future" (1987), gives a definition of the sustainability concept:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (United Nations, "Report of the World Commission on Environment and Development, Our Common Future", p. 41, 1983).

The report took as its point of departure the recognition that globalization now creates challenges that national states cannot solve in isolation. The challenges are scarcity of resources, economic development in the poorest countries of the World, growth, and pollution. Several World summits later, and above all far further in the globalization described in the report, it is now even more clear that national states cannot solve these challenges alone, but there is also hope in the shape of economic development, now primarily in developing countries. Add to that that the world civil society, including companies in Global Compact, have become far more involved.

The report also describes the solution to this global challenge. The solution was described as sustainable behaviour. This definition includes three cornerstones of society: Economics, environment, and social conditions. Instead of selecting just one of the three themes the point is precisely that the sustainable solution includes all three, see figure 7. Each of the cornerstones are interesting in their own right but it is their mutual relationship that determines whether the solution is sustainable. This is the main point of the report.

Food is a prerequisite for everybody. Naturally, the world's poorest countries must focus on this but if long term economic development disregards environmental consequences everyone's living standard is reduced by pollution. China is the prime example today. However, social and environmental consequences must be connected with economic considerations since we live in a world with growing populations that require higher standards of living. This requires economic growth.

Unfortunately, the concept of sustainability is often used as a synonym of an environmentally correct solution. It may be but that requires that economic considerations are involved. Economic considerations must always be part of an analysis of sustainability but cannot stand alone.

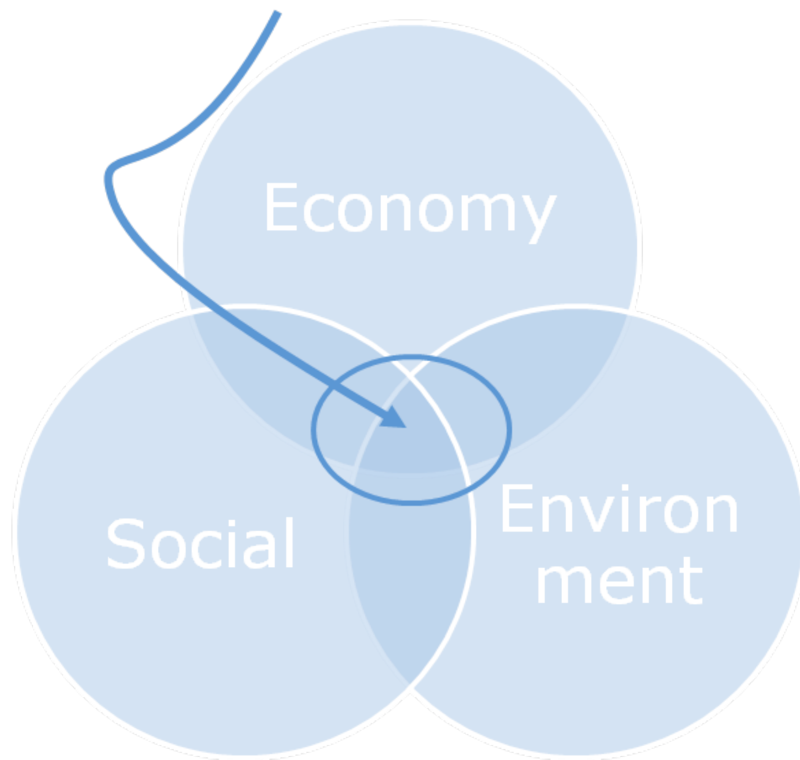

Figure 7: The sustainable solution.

Appendix C: Theoretical considerations behind ESG factors and risk/return

The idea of integrating ESG factors in the investment process is to instrumentalize the sustainability philosophy in practical usage in wealth management. The non-financial concepts of Environment, Social, and Governance must necessarily be measured in order to make them compatible with financial data. The idea is to enhance investments by using ESG data to select those companies that exhibit a more sustainable behaviour. The purpose is to reduce risk and improve opportunities in globalization in order to improve performance and even push the market in the direction of more sustainability and fewer externalities. The aim is to facilitate a positive development based in knowledge. The aim is not to dictate specific investments.

Pioneers made the first attempts in the 1990s to collect and implement ESG. However, the first real breakthrough came in 2004 with the UNEP FI report about 11 asset managers' specific arguments about ESG factor importance for investment results. The work was heavily inspired by UN general secretary Kofi Annan's work for a more sustainable business which among other took the shape of establishing Global Compact. The UNEP FI report became the introduction to establishing UN PRI as the investor world pendant to Global Compact. The integration of ESG factors became the first of a total of six principles for responsible investment. Today, more than 1,000 institutional investors, investing more than USD 34 trn. have signed the principles.

ESG can contribute to a better investment result through a reduction of risk and improvement of opportunity in the perspective of sustainability. Of course,the challenge is that it is hard to predict precisely when the impact of globalization and global challenges materialize. It is not always that risky behaviour shows up as accidents.

The risks and opportunities faced by some company may be divided into sectoral and specific behaviour relative to other companies. An oil company faces general risk of CO_2 regulation in the shape of taxes or quotas, making the sector less attractive because of smaller sales or higher costs. A single company in this sector may have a high comparative risk if the company uses more energy than the competitors in order to deliver oil to the market.

Once we look at opportunities, companies that can help solve global challenges are interesting. An example is clean-tech companies with products that can reduce exposures to global risks or completely eliminate them. Opportunities also include companies that produce more traditional products but include sustainability considerations in the business model. This could be anything from attracting employees to reducing costs such as water and energy consumption.

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