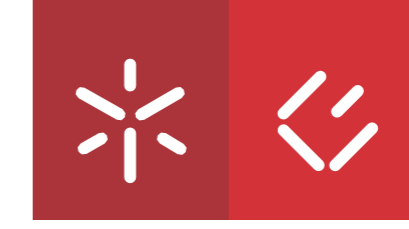


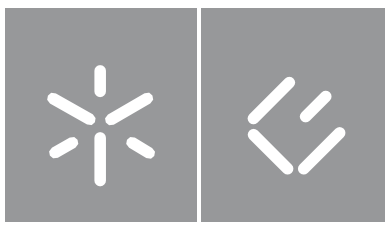


Does a greater environmental concern mean improved financial performance?

Miguel Salgueiro Neiva

Universidade do Minho
Escola de Economia e Gestão





Universidade do Minho

Escola de Economia e Gestão

Miguel Salgueiro Neiva

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mean improved financial
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Master Dissertation

Master in Finance

**Study realized under the supervision of
Professora Doutora Benilde Maria
Nascimento Oliveira**

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Abstract

Does a greater environmental concern mean improved financial performance?

This dissertation aims to study the relationship between environmental and financial performance, whether these are linearly correlated or not. It is used a ranking that scores firms from all over the world based on their action towards climate change. From this dataset eight portfolios are formed based on the scores of each firm, using an equally and value-weighted construction approach. The methodology used is based on Carhart (1997) four-factor model and Fama & French (2018) six-factor model. To capture possible environmental related risks, it is incorporated an additional factor to these models, based on the work developed by de Haan, Dam, & Scholtens (2012). The results point out that investors do pay for their preferences for higher sustainable firms and that if a poorer sustainable firm is exposed to a factor that captures environmental related risks it loses its abnormal returns. It is therefore concluded that environmental performance has undoubtedly an effect on financial returns. But this effect is not linear, a firm with higher sustainable concerns does not achieve a better financial performance, neither does a firm with lower sustainable concerns. The high exposure to environmental related risks does not allow top nor bottom sustainable firms to achieve abnormal returns.

Keywords: environmental performance; multi-factor models; green finance; sustainability; investors' taste.

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1 Introduction

The main goal of this study is to find whether firms that have greater environmental concerns, besides legislation required standards, have a better financial performance than those who do not. Motivated by the growing number of researches made around this topic and given that climate change has been affecting the world and therefore finance, it is important to understand whether the inclusion of environmental concerns on financial decisions leads to improved financial returns.

Green finance has been a topic that has had a lot of focus in the past few years by researchers. Its importance is due to the fact that climate changes have been affecting the world for some years now and start to be a major concern for society, hazards and extreme events arise affecting people's health and livelihoods. Therefore investors in a growing number start paying attention to climate change action when pondering an investment decision. Firms and managers are fully aware of this, making them to have to incorporate climate change concerns when formulating firms' investment decisions.

Environmental sustainable stocks and funds are increasing its presence in the financial markets, as its demand rises, since investors tend to have more and more consideration for pollution and climate change mitigation measures, making them betting their money on firms and funds that do invest to improve their environmental performance. This investment is not arbitrary, it is not just to please investors with environmental concerns, it is made because it can improve operational efficiency, as well as it is likely to decrease costs and lead to innovations, which can become a competitive advantage, leading a firm to have better products or services. If well implemented, environmental performance can show that there are managerial capabilities to lead a firm to success, making investors even more interested in this kind of firms. But this does not affect only investors, if a firm is well

viewed by society, it might attract better employees and increase sales, ultimately improving their financial performance.

Despite the previous arguments, there are also opposite views, that environmental investment, does not contribute to a better financial performance, with firms incurring on higher costs than the benefits achieved by having environmental concerns and that these should be supported by society. There are, as well, researches that conclude that the investment on environmental improvements, does not bring any benefits nor adversities.

Thus, it can be induced that there are different views regarding the investment on environmentally sustainable projects, as there are various studies supporting positive, negative and neutral perspectives. Accordingly, to analyze the impact of environmental performance on financial performance is challenging, as the various conclusions drawn on this issue are made using different criteria and methodologies, making it very hard to find the ones that provide the best results and that are accepted by all the financial community.

Studies, such as this use rankings, as the Newsweek Green Rankings (de Haan et al., 2012; Puopolo, Teti, & Milani, 2015) or Innovest corporate eco-efficiency scores (Derwall, Guenster, Bauer, & Koedijk, 2005), that provide actual and pertinent data on environmental performance of firms. With these approaches in mind, this study takes on Carbon Disclosure Project's The A List, as CDP's runs the global environment disclosure system, supporting companies, cities, states, and regions to measure and manage their environmental performance. It has the best collection of ensured self-reported environmental data and its scoring is now a global environmental standard. Using data, publicly available, from 2010 to 2019, portfolios will be constructed considering the different climate change evaluations of firms. These portfolios will be formed using an equally and value-weighted approach.

This research evaluates the performance of firms using unconditional multi-factor models, namely the Carhart (1997) four-factor model and Fama & French (2018) six-factor model. To capture investors' taste for firms with stronger environmental concerns effects,

an additional factor, non-green minus green (NMG), is constructed and added to the previously mentioned models, based on the work developed by de Haan et al. (2012), as this research proves that investors' taste does influence the financial return of a company, as firms with a worst environmental performance provide extra compensation, in order to compensate for their poor climate change action.

2 Literature review

The link between environmental and financial performance has been a research subject for many, being important to define what variables could affect the environmental investment decision process, how these variables should be measured, the conclusions reached by other researches and why investors' preferences are such an important factor.

2.1 The effects of social requirements on environmental performance

Sustainability is considered by many as a key matter towards the future of humanity. Therefore most companies aim to have good environmental performance and commonly try to incorporate sustainable practices in their investments decisions. Focusing on positive society wide benefits, helps firms to attract more clients and investors. As the effects of global warming increase, the interest for green sustainable stocks and funds increase as well, as these represent action taken towards climate change and contribute to the fight against this massive problem. International institutions and governments have now a stronger concern for this issue, leading them to implement measures that contribute to the decarbonization of our atmosphere.

As defined by Heal (2005), corporate environmental performance is the extent to which corporations voluntarily, integrate environmental concerns in their operations, beyond institutional requirements. As environmental performance becomes a common measure used to understand firm behavior, its lower bound are legal requirements, as firms without these kinds of measures are not allowed to legally develop their activities.

Firms must face climate change and it is crucial that their efforts are directed to profitability based on sustainable projects. Yet, some regions and industries do not have enough resources to fight this issue, which compromises the effort taken by others.

The impact of environmental restrictions on firms' financial returns have been a constant discussion, with some subscribing that these do improve financial performance and others that it does not, with various factors affecting these conclusions.

Employees and customers' preferences might be important, as people see firms' with stronger environmental performance as more attractive. Building environmental based robust brand reputation, can attract and retain talent workers, together with new clients. Due to this appeal, investors will look for companies with this sort of concerns, as environmental performance becomes a factor that has more relevance (Vandenbergh, 2006). As consumers and producers, take more and more in consideration environmental and sustainable products, firms are likely to suffer market pressure to implement environmental improvements. Firms that disclose environmental performance and it turns out to be good, are less likely to suffer either public or private pressures, from activists or regulators, which might allow them to have some benefits when trying to expand the business.

Walley & Whitehead (1994) reach a conclusion that the increase of sustainability standards leads to higher product prices and lower profitability, hindering companies' returns and what should be the main goal of a firm, maximize shareholder value. Porter & Linde (1995) have opposite results, as they provide explanations, that actually, higher sustainable concerns lead to a more efficient use of resources, which triggers profitable innovations, that end up being a competitive advantage.

Regarding the impact of the location of firms provoking differences on financial returns based on environmental performance, Galema, Plantinga, & Scholtens (2008) state that firms in developing countries have higher short-term returns, as these measures are not as common as in developed countries, leading these firms to be on the spotlight of those markets. As environmental performance is a higher concern in developed countries, firms in

these markets will struggle to obtain higher short-term returns, as they are required to invest more heavily in research and development to reach new environmentally-friendly products and processes. A firm's ability to capitalize on environmental performance is influenced by divergences in the economy, society, legal ground, and politics of each country. Economic disparity may lead to differences in resource scarcity which may affect environmental attitudes and practices (Zhu, Sarkis, & Lai, 2007).

It is also important to consider if meeting the regulations is enough for a firm to be well viewed by investors. Derwall et al. (2005) observe that U.S. firms waste prevention, instead of waste treatment, provides higher profits for firms. Differences on the regulations for different industries may also influence the relationship between environmental performance and financial performance. Specifically, it is possible that firms in industries with negative reputations, such as oil or mining, may experience greater media attention and pressure, resulting in the potential for greater gains if the environmental performance turns out to be good (Bansaal, 2005; Hoffman, 2001). Ziegler, Schröder, & Rennings (2007) conclude that the general environmental performance of an industry influences stock returns for firms within that industry, as opposed to the environmental performance of a specific big firm, which means that only the industry environmental performance affects stocks returns, not the environmental performance of competitors or reference firms.

The size of a corporation plays an important role, as large firms have more resources than small firms allowing for advantages associated with scale and greater investment in research and development and new technologies (Eden, Levitas, & Martinez, 1997; Woo & Cooper, 1981), while small firms may not have the resources to address environmental performance (Welsh & White, 1981). On the other hand, it is possible that small firms are more flexible, making them better prepared to respond to environmental challenges and organizational changes (Storey, 1994; Yu, 2001).

Since publicly traded firms have a lot of media attention and are constantly under public scrutiny, they may feel pressured to adopt environmental initiatives despite of potential lower

profitability (Dean, Brown, & Bamford, 1998), but they can also benefit from it, capitalizing on their environmental involvement. Private firms cannot benefit from media attention, as much as public firms, but this may enable them to choose environmental projects that are more suitable for the firm, avoiding an unnecessary waste of resources.

2.2 The measurement of environmental and financial performance

A company's environmental performance is sometimes referred to as the absolute pollution level it produces, but it should be measured using a ratio of the value added and the waste they generate, as a company from a poor environmentally industry, despite polluting more, can achieve competitive advantages, in comparison to their competitors (Derwall et al., 2005). Given this, environmental performance could be measured through different ways, such as independent databases, self-report surveys and pollution indicators. It must be considered whether to use a measure of chemical indicators or a comprehensive indicator of a firm's total environmental performance, always seeking to find its reliability, as results could have substantial differences due to this aspect (Sharma & Starik, 2002). Self-report surveys have the possibility of being biased, affecting the final results (Sharma, 2001).

Different results should also be expected, when a different variable is considered to represent financial performance, such as the return on equity and stock price. The return on equity, a long-term indicator, represents the profitability of a corporation in relation to stockholders' equity, whereas the stock price, a short-term indicator, represents the current price of a share, that is conditional on everyday events. These divergences are quite noticeable, as the investment on environmental concerns, usually takes some time to have an effect on a company's financial returns.

The main challenge in understanding whether environmental standards contribute to financial returns, is incorporating these environmental standards into share prices, in a

comprehensive and acknowledged way. Studies on this subject, might be biased, due to aspects hard to quantify or qualify, such as management skills.

2.3 The impact of environmental performance on financial performance

Previous studies, regarding the impact of environmental performance on financial performance, reach different conclusions. Some find a positive relationship, others a negative relationship and others no relationship at all.

Investing in green and sustainable innovations is claimed to bring progress and advantages to firms, leading these to have higher returns. Halcoussis & Lowenberg (2019) show that portfolios with lower carbon emissions typically earn higher returns than the general market, much caused by the poor performance of the fossil fuel industry, showing that the divestment on the fossil fuel industry does not harm investors, it gives them higher returns. Studying the impact of the divestment on high carbon emissions firms, Hunt & Weber (2019) find that, not only investors earn higher returns, but also, contribute to a reduction of global carbon emissions, helping on the fight against climate change.

The cost of investing in environmental standards could be unfavorable to companies, with the trade-off between rewards and costs being negative. According to Cordeiro & Sarkis (1997) environmentally proactive firms are set to have worst earnings-per-share in the short-term, as security analysts anticipate the investment in environmental practices as a costly activity that does not provide returns on short-term performance. Studying on the correlation between Environmental, Social, and Governance (ESG) disclosure and firm financial performance, Almeyda & Darmansya (2019), find that there is a significant positive relationship between ESG disclosure with firm's Return-On-Assets and Return-On-Capital, but no significant relationship with Stock Price, denoting the poor short-term performance, when considering environmental concerns.

Taking on a different methodology de Haan et al. (2012) reach the conclusion that environmental performance and stock returns are negatively correlated, as investors' taste causes the stock of firms with a good environmental performance to become overpriced and given this firms with poor environmental performance are required to provide higher returns in order to compensate investors for investing on firms with dubious reputation. Similarly, Maiti (2020), adding a factor that controls for ESG risks, into the Fama & French (1993) three-factor model, achieve better results, denoting the influence of ESG on the financial performance of firms.

Researching on whether investors' disagreement over payoffs and consumer tastes can substitute for financial performance, as formulated by Fama & French (2007), Ng & Zheng (2018) demonstrate that these affect only green firms and so investors will not bear a cost nor have abnormal returns when investing on green firms. Puopolo et al. (2015) consider that there is no linear relationship between environmental performance and financial returns, as a better environmental behavior neither leads to a premium nor a penalty.

Meta-analysis regarding this subject, provided by Dixon-Fowler, Slater, Johnson, Ellstrand, & Romi (2013), Endrikat, Guenther, & Hoppe (2014) and Busch & Lewandowski (2018) show that environmental performance is positively connected with financial performance. It is concluded that the different results across studies are mainly due to methodological differences, but ultimately the financial performance of firms that invest on environmental actions is higher than those who do not.

2.4 Investors' Preferences

Investors' preferences are an important factor that have the possibility to affect the development of financial markets. The preferences for sustainable stocks, might lead these to become overpriced and therefore lead investors to have worst returns than those that do

not consider this matter.

Galema et al. (2008) conclude that models linking environmental performance and financial performance assume that there are investors that prefer firms with a good environmental performance and investors that do not look at this factor. This leads to an excess demand for firms with a good environmental performance, causing their stock to become overpriced and the stock of firms with a poor environmental performance to become underpriced. Similarly, Renneboog, Horst, & Zhang (2008) defend that excess demand for sustainable stocks, causes them to become overpriced, without a proper exploit by the market of this mispricing. Including an additional factor to control for ethics in investment choices, they conclude that investors do pay for their taste for ethics. Hong & Kacperczyk (2009) reach a similar conclusion, that poor environmental companies outperform others, leaving the idea that sustainable companies are overpriced, much due to social norms and therefore investors' preferences.

This conclusion had been reached by other authors, with Merton (1987), demonstrating that firms with poor environmental performance are underpriced, in order to compensate investors for holding stocks that might not meet their preferences. On an opposite view, although concluding that the returns of sustainable firms are lower, Brammer, Brooks, & Pavelin (2006) suggests that altruistic shareholders are willing to forgo higher returns in order to feel good about the environmentally friendly stocks that they hold.

Heinkel, Kraus, & Zechner (2001) formulate that investors' taste for sustainability could have an impact on the cost of capital of a firm, so that when the difference of price between acceptable and unacceptable environmental policies is large enough it becomes optimal to invest on environmental improvements.

Hirshleifer (2001) constructs a framework from which it is concluded that investors' feelings do lead to investment biases, which should be considered when evaluating the financial performance of securities, as this bias will lead to under or overpriced securities.

Fama & French (2007) research on whether the disagreement and tastes between dif-

ferent investors play a role in asset pricing, with the prerogative that misinformed investors, with a big share of all invested wealth, can increase discrepancies in the expected returns of stocks. The gap between the market portfolio, held by the entire universe of investors, and the tangency portfolio, the portfolio that offers the highest ratio of risk premium to standard deviation held by informed investors, increases as misinformed investors have a bigger share of invested wealth. This leads to under and overpriced securities, based on investors' taste.

Liston (2016) analyzes whether investors' sentiment for poor environmental performing firms affects financial returns. The inference reached is that after the inclusion of a variable representing investors' sentiment, the abnormal returns presented by this sort of firms disappear.

Studying on the premium achieved by environmentally friendly companies, Derwall et al. (2005) conclude that, in environmentally sensitive sectors, investors are likely to take into account environment-related information into their investment decisions, but when the benefits of the investment on environmental improvements are not clear, the pricing of securities might be inappropriate.

de Haan et al. (2012), comparing the abnormal returns of portfolios formed on the basis of environmental scores, find that these increase with worsening environmental reputation. This reflects that these companies provide better returns, in order to induce investors to hold portfolios with dubious reputation.

3 Methodology

In order to analyze the performance of firms present on CDP's The A List (2020), synthetic portfolios will be formed, based on its scores. These portfolios will be formed using an equally and value-weight approach.

Addressing the evaluation of the formed portfolios, it will be used unconditional multi-factor models, as these provide inferences on the real return of stocks, with the capture of common market risk, company size, book-to-market value, momentum, profitability and the investment style differences between companies. The models used to estimate the results intended are the Carhart (1997) four-factor model and the Fama & French (2018) six-factor model, as these are the models proven to capture risks in the most efficient way, when evaluating the performance of stocks. Additionally, since this study concerns the environmental performance of companies, these models will also have the addition of a factor (NMG), in order to control for environmental related risks and investors' preferences for companies with a better environmental evaluation.

3.1 Discrete Returns

To begin the evaluation of the performance of the portfolios, it is necessary to calculate discrete returns for the companies. Thus, it is used the following formula:

$$r_t = \frac{P_t - P_{t-1}}{P_{t-1}} \quad (3.1)$$

Where r_t represents the discrete returns, which consists on calculating the difference in the value of the security between the two periods divided by the value of the security of the oldest period of that difference; P_t the price of a firm's stock at time t ; P_{t-1} the price

of a firm's stock at time $t-1$.

3.2 Portfolio Construction

After the calculation of the discrete returns of each firm's stock, synthetic portfolios are formed. The formation of these portfolios is based on CDP's The A List (2020), as it provides different scores for firms. These portfolios are to be constructed using an equally and value-weighted approach with annual rebalancing, using daily returns.

Most literature suggests that equally-weighted portfolios greatly outperform value-weighted or price-weighted portfolios. Plyakha, Uppal, & Vilkov (2012) conclude that an equally-weighted portfolio outperforms others because it is more exposed to the market, size and value risk factors, having a significantly higher mean return than other kind of portfolios. Bolognesi, Torluccio, & Zuccheri (2013) reach a similar conclusion, in which equally-weighted portfolios outperform value-weighted portfolios, as maintenance of equal weights does not allow for companies with great growth to dominate a portfolio and therefore present results that are more appropriate when considering the whole market. But these portfolios do not represent the aggregate equity market, as they treat large, medium and small capitalization stocks regardless of their market liquidity (Arnott, Hsu, & Moore, 2005). Value-weighted portfolios, therefore, provide a better representation of the equity market as it is. The weight of a stock in a value-weighted portfolio completely explains the trading volume of that stock, which means that the turnover of stocks, in a value-weighted portfolio is identical for all (Bhattacharya & Galpin, 2011). The foundations of Modern Portfolio Theory are that investors should diversify by buying different optimal portfolios (Markowitz, 1952a), two optimal portfolios where sufficient to achieve optimal returns (Tobin, 1958) and one of these portfolios should be the market portfolio (Sharpe, 1964). The market portfolio is unobservable, but a value-weighted portfolio is the closest to it. Given this, this research will consider both an equally and a value-weighted approach.

The equally-weighted portfolios will be formed as the following:

$$r_{p,t} = \frac{\sum_{i=1}^n \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}}}{n} \quad (3.2)$$

Where $r_{p,t}$ is the return of portfolio p at time t; $P_{i,t}$ the price of the stock of firm i at time t and $P_{i,t-1}$ the price of the stock of firm i at time t-1, being n the number of stocks included in the portfolio.

The value-weighted portfolios are formed, such as:

$$r_{p,t} = \frac{\sum_{i=1}^n \frac{P_{i,t} \times \frac{MV_{i,t}}{MV_{p,t}} - P_{i,t-1} \times \frac{MV_{i,t-1}}{MV_{p,t-1}}}{P_{i,t-1} \times \frac{MV_{i,t-1}}{MV_{p,t-1}}}}{\quad} \quad (3.3)$$

Where $r_{p,t}$ is the return of portfolio p at time t; $P_{i,t}$ the price of the stock of firm i at time t; $P_{i,t-1}$ the price of the stock of firm i at time t-1; $MV_{i,t}$ is the market value of each security at time t; $MV_{i,t-1}$ is the market value of each security at time t-1; $MV_{p,t}$ is the market value of the portfolio at time t and $MV_{p,t-1}$ is the market value of the portfolio at time t-1.

3.3 Performance measure

One of the most widely used theoretical models for pricing a financial asset is the Capital Asset Pricing Model (CAPM). The CAPM model was developed simultaneously by Sharpe (1964), Litner (1965) and Mossin (1966), and its the result of the development of the Modern Financial Theory initiated by Markowitz (1952b). According to this model, the expected return on a given asset or portfolio is linearly related to the expected return on the market, through the following equation:

$$E[r_{p,t}] = r_{f,t} + \beta_p(E[r_{m,t} - r_{f,t}]) \quad (3.4)$$

Where $E[r_{p,t}]$ is the expected return on the portfolio p in period t; $r_{f,t}$ is the return on a risk-free asset in period t; β_p is the systematic risk of the portfolio; and $E[r_{m,t} - r_{f,t}]$ is the expected return on the market portfolio in period t. This model assumes that the only risk factor that affects the expected return on an asset is systematic risk. Sharpe (1964) presents beta as a parameter that represents systematic (non-diversified) risk which measures the sensitivity of an asset to the behavior of a portfolio that represents the market. Therefore, only systematic risk is rewarded. However, as indicated by Roll (1977), the model is empirically untestable as the market portfolio is unobservable. Since this is an ex-ante analysis and market expectations are not observable, the empirical analysis of the model implies the use of ex-post data. Thus, equation 3.4 can be rewritten as follows:

$$r_{p,t} - r_{f,t} = \beta_p(r_{m,t} - r_{f,t}) + \epsilon_{p,t} \quad (3.5)$$

Where $\epsilon_{p,t}$ is the residual. Given that there is a possibility that the market may not be in equilibrium, it is important not to condition the regression to the origin, which means that equation 3.5 must change to:

$$r_{p,t} - r_{f,t} = \alpha_p + \beta_p(r_{m,t} - r_{f,t}) + \epsilon_{p,t} \quad (3.6)$$

Where α_p represents the measure of portfolio imbalance, also known as abnormal return - return above or below the CAPM equilibrium return implied by its level of systematic risk. This performance measure was developed by Jensen (1968) who concluded that a positive α_p implies that the portfolio performed positively. This means that when analyzing the performance of a portfolio, if the assumptions underlying the CAPM are to be verified, a positive α_p reflects a portfolio, adjusted for systematic risk, that financially outperforms the market. Jensen's alpha will therefore be the performance measure used to analyze the performance of the portfolios formed in this research.

3.4 Multi-factor Models

Motivated by the CAPM, the first researches on performance evaluation adopt single-index models. But the CAPM had flaws, that were constantly being pointed out. Basu (1977) found that depending on their Price/Earnings ratio, stocks had better returns, than those predicted by CAPM. Elton, Gruber, Das, & Hlavka (1993) criticized the use of single index models by examining the study of Ippolito (1989), demonstrating that single factor models tend to overestimate performance estimates. Fama & French (1993) show that the inclusion of size and book-to-market value captures stock returns in a more significant way, making their inclusion in a model of high importance. Therefore, this analysis will not consider the usage of the CAPM model.

With the emergence of the Arbitrage Pricing Theory, multi-index models were developed, and Jensen's alpha was generalized to a multi-factor context. The first most widely used multi-factor model is the Fama & French (1993) three-factor model. With this model it is possible to observe the performance through Jensen's alpha and see if more control risk factors increase the regression explanatory power. The Fama & French (1993) three-factor model is estimated by:

$$r_{p,t} - r_{f,t} = \alpha_p + b_{p1}(r_{m,p} - r_{f,t}) + b_{p2}(SMB_t) + b_{p3}(HML_t) + \epsilon_{p,t} \quad (3.7)$$

Fama & French (1993) add two factors to the CAPM model, the factor SMB_t (small minus big) that is the difference in returns between a portfolio of small stocks and a portfolio of large stocks at time t and the factor HML_t (high minus low) that is the difference in returns between a portfolio of high book-to-market stocks and a portfolio of low book-to-market stocks at time t . Fama & French (1993) include these two factors based on the suggestion that there are other variables that explain returns such as size and book-to-

market ratio, where smaller firms and high book-to-market firms have higher returns. SMB is the excess return that smaller market capitalization firms have over big market capitalization firms. If a portfolio is composed mostly by small capitalization firms it should outperform the market on the long-run and this factor aims to capture risks related to this sort of problem, controlling for the influence of firm size on financial returns. HML represents the differences in the returns of value and growth stocks. Firms with high book-to-market ratios, value stocks, commonly outperform firms with low book-to-market ratios, growth stocks. This factor controls the differences in the composition of a portfolio, as a greater inclusion of value stocks will substantially affect the final performance and with this factor this problem will not unsettle the results.

Despite this improvement, there was something missing, as stock returns were not completely explained by only size, book-to-market ratio and systematic risk. De Bondt & Thaler (1985), prior to the formulation of this model already had found that there were differences in the returns of portfolios formed by companies with good and bad past performance. Jegadeesh & Tiltman (1993) constructed the Momentum factor, in which it was established that the past performance of a security has a high effect on future performance, proving its tremendous importance when focusing on stock market efficiency. Fama & French (1996) acknowledged that their model did not explain the tendency for past performance to persist over several months. Given so much evidence supporting Momentum was being disclosed, Carhart (1997) developed the four-factor model, that consists on the Fama & French (1993) three-factor model plus an additional factor to capture for Momentum. The four-factor model of Carhart (1997) adopts this explanation where MOM_t (Momentum) is the difference in the returns of a portfolio of past winners and a portfolio of past losers at time t:

$$r_{p,t} - r_{f,t} = \alpha_p + b_{p1}(r_{m,p} - r_{f,t}) + b_{p2}(SMB_t) + b_{p3}(HML_t) + b_{p4}(MOM_t) + \epsilon_{p,t} \quad (3.8)$$

The four-factor model became the most widely used multi-factor model, as the inclusion of the Momentum factor provided much better results, as Carhart (1997) explains that the investment in the previous year top funds and a divestment in the previous year worst funds provides an above average return. Momentum has a high impact on stocks returns and if well handled, based on this factor very high returns can be achieved. Thus, it can be said that without this factor the analysis on the financial performance of securities misses the explanation of a very important variable that contributes to the financial performance of a firm. If not included on the model, Momentum will be translated on the alpha, providing inaccurate results on the true performance of a firm.

The multi-factor model developed after was the Fama & French (2015) five-factor model. They added to their previous model, Fama & French (1993) three-factor model, two factors, in order to explain that companies with higher investments tend to have lower returns and a proxy for expected profitability that is strongly related to average return. Fama & French (2015) five-factor model is estimated by:

$$r_{p,t} - r_{f,t} = \alpha_p + b_{p1}(r_{m,p} - r_{f,t}) + b_{p2}(SMB_t) + b_{p3}(HML_t) + b_{p4}(RMW_t) + b_{p5}(CMA_t) + \epsilon_{p,t} \quad (3.9)$$

Here, RMW_t is the profitability factor, which represents the difference between the returns on diversified portfolios of stocks with robust and weak profitability at time t and CMA_t is the investment factor, that represents the difference between the returns on diversified portfolios of the stocks of low and high investment firms (conservative and aggressive) at time t. Novy-Marx (2013) concludes that profitable firms generate substantially higher average returns than unprofitable firms and that adding a profitability strategy reduces overall portfolio volatility. Paying attention to this variable dramatically increases the performance when constructing a portfolio. Thus, the inclusion of the RMW factor becomes an important matter when evaluating the financial performance of securities. CMA is a factor developed after the conclusions reached by Titman, Wei, & Xie (2004), that find that the

investment profile of a firm tends to show important information regarding their financial performance. They suggest that there is a negative relation between abnormal investments and stock returns. Increased investment can provide information that firms with this kind of behavior are likely to find better investment opportunities, but also that these are managed by individuals who tend to over-invest. This means that aggressively investing firms probably have worst management decisions, that affect their financial returns. Therefore, it is important to control for investment profiles of firms, as it reduces the risks of stock returns being influenced by this matter.

As pointed out by Blitz, Hanauer, Vidojevic, & van Vliet (2016), the five-factor model provided by Fama & French (2015), has several flaws. The main one is the lack of the inclusion of the Momentum factor. This factor is widely accepted as it strongly explains a part of stock returns. This model did not settle the concerns regarding asset pricing models. Its results suggest an inferior performance when compared to Carhart (1997) four-factor model. Even Fama & French (2018) subscribe that their five-factor model fails to explain the momentum effect and so develop a model that does includes this factor. A six-factor model is established as Fama & French (2018) make a comparison between the CAPM, the three-factor model, the five-factor model and an additional six-factor model, in which they add to the five-factor model the Momentum factor, which is estimated by:

$$r_{p,t} - r_{f,t} = \alpha_p + b_{p1}(r_{m,p} - r_{f,t}) + b_{p2}(SMB_t) + b_{p3}(HML_t) + b_{p4}(RMW_t) + b_{p5}(CMA_t) + b_{p6}(MOM_t) + \epsilon_{p,t} \quad (3.10)$$

The conclusion from this comparison is that the six-factor model is the one with the best performance parameters, as the inclusion of the Momentum factor, unsurprisingly, substantially increases the explanatory power of the model. Additionally Fama & French (2018) add, that to provide a good inference on the results of a research, each study should have a relatively short list of models. Accordingly, this research will include only the Carhart (1997) four-factor model and the Fama & French (2018) six-factor model, as these are the

ones that best incorporate variables, in order to analyze the financial performance of firms based only on common risk exposure.

3.5 NMG Factor

As presented in various researches, investors' taste for higher environmental performance firms is an aspect that could influence financial returns, when it is considered to study the impact of environmental performance on financial performance. Researches on the inclusion of psychological issues on asset pricing models have been discussed for a long time.

The most common conclusion, when analyzing this issue, is that investors' taste does influence financial returns. Investors are willing to let go of potential profit, in order to feel satisfied with the stocks they own, stocks from firms that have a higher environmental concern. Due to this, there will be an increasing demand, that will lead these stocks to become overpriced (Brammer et al., 2006; Galema et al., 2008; Renneboog et al., 2008). With this increasing demand, firms with poor environmental performance must present higher financial returns, in order to compensate investors for letting go of their personal preferences (de Haan et al., 2012), being these environmental related risks an important aspect to consider when analyzing the financial performance of firms.

In order to control for the possibility that environmental related risks do affect financial performance, an additional factor, NMG (non-green minus green), is added to the models to be used, the Carhart (1997) four-factor model and the Fama & French (2018) six-factor model. This factor is based on the prerogative that, to attract investors, firms with a lower environmental performance, provide higher returns than firms with a higher environmental performance. Therefore, a factor that controls for these differences is important in order not to obtain abnormal returns based on the premise that environmental related risks do not influence those. Therefore, it will be used a five-factor model and a seven-factor model

to analyse the portfolios.

Given this, equation 3.8 becomes:

$$r_{p,t} - r_{f,t} = \alpha_p + b_{p1}(r_{m,p} - r_{f,t}) + b_{p2}(SMB_t) + b_{p3}(HML_t) + b_{p4}(MOM_t) + b_{p5}(NMG_t) + \epsilon_{p,t} \quad (3.11)$$

And equation 3.10 becomes:

$$r_{p,t} - r_{f,t} = \alpha_p + b_{p1}(r_{m,p} - r_{f,t}) + b_{p2}(SMB_t) + b_{p3}(HML_t) + b_{p4}(RMW_t) + b_{p5}(CMA_t) + b_{p6}(MOM_t) + b_{p7}(NMG_t) + \epsilon_{p,t} \quad (3.12)$$

The NMG factor is constructed, using the approach developed by de Haan et al. (2012), in which, similarly to the SMB and HML factors constructed by Fama & French (1993), NMG is a portfolio consisting on the subtraction of a portfolio composed by the firms with the best environmental performance from a portfolio composed by the firms with the worst environmental performance. For this particular case, the NMG portfolio will be calculated, as the subtraction of the returns of the portfolio formed based on the firms ranked with the highest score, A, from the returns of the portfolio of firms ranked with the worst score. As the worst score varies, in 2010 is D, from 2011 until 2015 is E and from 2016 until 2019 is D-, an additional portfolio, denominated as W, that stands for worst, is constructed with the scores, for each timeline, as mentioned before. Therefore the NMG portfolio is constructed as the following:

$$NMG_t = r_{pWt} - r_{pAt} \quad (3.13)$$

Where NMG_t is the return of the NMG factor at time t, r_{pWt} is the return of Portfolio W at time t and r_{pAt} is the return of Portfolio A at time t.

4 Data

4.1 Dataset

The dataset used for this research is based on CDP's The A List (2020). In this list it is disclosed the environmental performance and transparency of the most pioneering companies from all over the world and different industries. From this list all publicly traded firms with publicly available information on their environmental performance on CDP's website will be used.

The data will be referent to 10 years, with the timeline from 2010 until 2019, as prior data is not publicly available and given this, dead firms will also be included in the analysis. The companies included are from 60 different countries and from many different industries, which makes this research very widespread and applicable to the global market. From 2010 until 2015, firms are scored with an A, B, C, D or E. From 2016 until 2019 the scores are A, A-, B, B-, C, C-, D or D-. The scoring evaluation is made based on the disclosure of information given by companies to CDP.

CDP's scores are made in three areas, Climate Change, Forests and Water Security. This research uses only the Climate Change scores, as Forest and Water Security is yet to be a major focus for investors and the information regarding these areas is scarcer.

To be evaluated on Climate Change, companies are requested to fill a questionnaire regarding 14 modules: governance, risks and opportunities, business strategy, targets and performance, emissions methodology, emissions data, energy, additional metrics, verification, carbon pricing, engagement and have sector related questions. This information is not verified by CDP, but all companies are required to reference a third party verification standard, in which the information provided is to be confirmed.

Companies are then evaluated as A or A-, which corresponds to Leadership Level, in which firms demonstrate strategic best practices towards climate change. B or B-, corresponds to Management Level, in which firms start to take proactive action to fight climate change. C or C-, corresponds to Awareness Level, with firms understanding climate impacts from their actions and taking measures to fight them. D or D-, corresponds to Disclosure Level, as firms start to disclose their environmental performance. Corporations, before 2016, were evaluated with an E, which for the portfolio formation will be considered as D-. Some companies are evaluated with an F, which means they have not disclosed sufficient information to have a quotation and others might have private scores or not have been requested to provide information. These companies are excluded from this study, as they are not scored and will not provide comprehensive information to investors, which makes their performance evaluation considering environmental performance impracticable. This ranking is not a comprehensive metric of a company's level of sustainability, it is an indication of the level of action taken by the company to assess and manage its climate change impacts.

In Table 4.1 it is presented the number of firms for each portfolio. There is an increasing amount of firms reporting data to CDP's The A List (2020), which enables a research based on a robust database. The detailed firms that are present in this research are presented in Appendix G.

Table 4.1: Number of firms by portfolio in each year

	A	A-	B	B-	C	C-	D	D-
2019	171	319	706	117	547	23	270	42
2018	131	252	540	90	541	22	400	45
2017	118	389	491	29	666	49	281	62
2016	190	350	565	40	519	44	234	54
2015	112	76	500	-	437	-	421	219
2014	185	69	527	-	395	-	269	97
2013	96	44	401	-	290	-	266	77
2012	64	29	336	-	375	-	335	151
2011	44	38	221	-	329	-	266	105
2010	56	-	247	-	276	-	42	-

This table reports the number of firms in each portfolio.

4.2 Market Benchmarks

As market benchmarks, are used the Standard & Poor's Global 1200 Index (S&P Global 1200) and the Dow Jones Sustainability Index World (DJSIW). The first will provide information for the exposure of the different portfolios on the conventional market and the second will provide information for the exposure of the different portfolios when confronted only with sustainable firms. The S&P Global 1200 is an index that provides efficient exposure to the global equity market, capturing 70% of the global market capitalization, composed based on leader indexes of United States of America, Europe, Japan, Canada, Australia, Asia and Latin America. The Dow Jones Sustainability Index World comprises the top 10% of global sustainable firms. These are identified by RobecoSAM, based on long-term economic, environmental and social criteria.

The returns from these, are extracted from Thomson Reuters Datastream (2020), for the period from the beginning of 2010 until the end of 2019, in US dollars.

In Table 4.2 it is presented the number of observations, the mean, the standard deviation, the minimum, the maximum and the Jarque-Bera Normality Test for both benchmarks

returns over the mentioned period. These demonstrate positive mean, negative skewness and excess kurtosis. This means that these are nearly symmetrical, but have fat tails, denoting some extreme results when compared to the mean. Looking at the Jarque-Bera Test results, it is concluded that there is no normality in the benchmarks returns data.

Table 4.2: Descriptive Statistics of Market Benchmarks

Statistic	N	Mean	St. Dev.	Skewness	Kurtosis	Min	Max	JB Test ¹	
								x^2	p-value
S&P 1200	2,515	0.0004	0.008	-0.462	7.289	-0.053	0.048	2018.4	< 2.2e-16
DJSIW	2,515	0.0003	0.009	-0.533	10.031	-0.072	0.062	5301.6	< 2.2e-16

This table reports descriptive statistics for the Standard & Poor's Global 1200 index returns and the Dow Jones Sustainability Index World returns over the period from January 2010 until December 2019. The number of observations, the mean, the standard deviation, the skewness, the kurtosis, the minimum, the maximum and the Jarque-Bera Test are presented.

4.3 Factors

For the evaluation using the multi-factor models, namely the Carhart (1997) four-factor model and the Fama & French (2018) six-factor model it is necessary the risk-free rate, the SMB, HML, MOM, RMW and CMA factors, which are provided by Kenneth R. French - Data Library (2020). These factors present data since 1963, with the exception of MOM which presents data since 1926 and all are expressed in US dollars. For this research, as it is only necessary data since the beginning of 2010, the other years are excluded.

Table 4.3 presents the number of observations, the mean, the standard deviation, the minimum, the maximum and the Jarque-Bera Normality Test for all these factors in the period mentioned. These present a symmetrical skewness, with the exception of the Risk Free Rate that presents high skewness and all have excess kurtosis. Through the analysis of the results of the Jarque-Bera Test normality is rejected.

¹Jarque-Bera Normality Test developed by Jarque & Bera (1987).

Table 4.3: Descriptive Statistics of Factors

Statistic	N	Mean	St. Dev.	Skewness	Kurtosis	Min	Max	JB Test ¹	
								χ^2	p-value
RF	2,515	0.002	0.003	1.359	3.362	0.000	0.010	788.19	< 2.2e-16
SMB	2,515	-0.002	0.515	0.192	4.577	-1.980	3.600	275.97	< 2.2e-16
HML	2,515	-0.010	0.505	0.341	4.936	-1.870	3.070	441.56	< 2.2e-16
RMW	2,515	0.005	0.347	0.036	4.816	-1.810	1.840	346.2	< 2.2e-16
CMA	2,515	0.001	0.301	0.350	4.980	-1.330	1.970	462.31	< 2.2e-16
MOM	2,515	0.019	0.703	-0.314	5.036	-3.810	3.630	475.56	< 2.2e-16

This table reports descriptive statistics for the Risk Free Rate and the SMB, HML, RMW, CMA and MOM factors over the period from January 2010 until December 2019. The number of observations, the mean, the standard deviation, the skewness, the kurtosis, the minimum, the maximum and the Jarque-Bera Test are presented.

4.4 Firm's data

To form the portfolios, information regarding the financial returns and the market value of all firms is necessary. The data is downloaded from Thomson Reuters Datastream (2020), in US dollars. In Appendix G, it is possible to check all the companies that constitute the portfolios, and were therefore evaluated. The portfolios are then constructed, using both an equally and value-weighted approach, using daily data, with annual rebalancing. After this, it is possible to construct the NMG factor, using the methodology previously mentioned.

Tables 4.4 and 4.5 present the number of observations, the mean excess return, the standard deviation, the skewness, the kurtosis, the minimum, the maximum and the Jarque-Bera Normality Test for all the portfolios and NMG factor returns, with the equally and value-weighted approach, respectively. These statistics are referent to the period from 2010 until 2019. From the mean and standard deviation there are not many conclusions to be taken, with the exception that the approach used in the construction of the portfolios provides different results. Regarding skewness, the portfolios provide fairly symmetrical data, with the exception of Portfolio C- in the equally-weighted approach, that has high skewness. Looking at kurtosis it is observed leptokurtic data, which demonstrates the presence of some outliers, meaning these have fat tails. The results of the Jarque-Bera Test denote the lack of a normal distribution in the data.

Table 4.4: Descriptive Statistics of Equally-Weighted Portfolios

Statistic	N	Mean	St. Dev.	Skewness	Kurtosis	Min	Max	JB Test ¹	
								x^2	p-value
Portfolio A	2,515	0.0003	0.008	-0.442	6.903	-0.056	0.051	1678.4	< 2.2e-16
Portfolio A-	2,263	0.00000	0.021	-0.075	10.655	-0.162	0.166	6143.6	< 2.2e-16
Portfolio B	2,515	0.0002	0.013	-0.514	7.133	-0.085	0.093	1900.6	< 2.2e-16
Portfolio B-	1,005	0.0003	0.011	-0.526	8.386	-0.083	0.049	1261.2	< 2.2e-16
Portfolio C	2,515	0.0003	0.011	-0.459	8.364	-0.101	0.080	3103.9	< 2.2e-16
Portfolio C-	1,005	0.0004	0.012	-1.709	23.839	-0.125	0.064	18674	< 2.2e-16
Portfolio D	2,515	0.001	0.011	-0.806	11.703	-0.112	0.059	8208.8	< 2.2e-16
Portfolio D-	2,263	0.001	0.010	-0.342	6.552	-0.070	0.062	1371.4	< 2.2e-16
NMG	2,515	0.0003	0.005	0.041	3.656	-0.022	0.023	45.828	1.118e-10

This table reports descriptive statistics for all the equally-weighted portfolios returns over the period from January 2010 until December 2019. The number of observations, the mean, the standard deviation, the skewness, the kurtosis, the minimum, the maximum and the Jarque-Bera Test are presented.

Table 4.5: Descriptive Statistics of Value-Weighted Portfolios

Statistic	N	Mean	St. Dev.	Skewness	Kurtosis	Min	Max	JB Test ¹	
								x^2	p-value
Portfolio A	2,515	0.001	0.009	-0.084	5.230	-0.046	0.063	524.08	< 2.2e-16
Portfolio A-	2,263	0.0003	0.015	-0.294	9.064	-0.102	0.115	3889.3	< 2.2e-16
Portfolio B	2,515	0.0002	0.016	-0.375	7.611	-0.120	0.118	2286.9	< 2.2e-16
Portfolio B-	1,005	0.0005	0.011	-0.176	6.620	-0.065	0.051	553.82	< 2.2e-16
Portfolio C	2,515	0.0003	0.015	-0.021	7.395	-0.089	0.125	2024.6	< 2.2e-16
Portfolio C-	1,005	0.0004	0.012	-0.014	17.10	-0.080	0.102	8323.5	< 2.2e-16
Portfolio D	2,515	0.001	0.017	-0.186	5.309	-0.089	0.094	572.99	< 2.2e-16
Portfolio D-	2,263	0.001	0.017	-0.058	5.636	-0.091	0.083	729.56	< 2.2e-16
NMG	2,515	0.0005	0.015	0.074	4.828	-0.086	0.083	352.48	< 2.2e-16

This table reports descriptive statistics for all the value-weighted portfolios returns over the period from January 2010 until December 2019. The number of observations, the mean, the standard deviation, the skewness, the kurtosis, the minimum, the maximum and the Jarque-Bera Test are presented.

4.5 Multicollinearity

The introduction of a new factor might bring questions arising on whether it has a similar effect to all the other factors. To understand whether this is a problem the following matrix is build:

Table 4.6: Correlation Matrix of Factors

	S&P 1200 - RF	DJSIW - RF	SMB	HML	RMW	CMA	MOM	NMG
S&P 1200 - RF	1							
DJSIW - RF	0.57***	1						
SMB	0.24***	0.09***	1					
HML	0.15***	0.08***	0.06*	1				
RMW	-0.37***	-0.12***	-0.35***	-0.18***	1			
CMA	-0.07**	-0.04	0.00	0.58***	0.02	1		
MOM	-0.05	-0.04	-0.11***	-0.36***	0.02	-0.14***	1	
NMG	0.13***	0.03	0.26***	0.04	-0.17***	0.06*	-0.02	1

This table reports the correlation of each risk factor and benchmarks. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Looking at this results, there are no signs of dependence between variables, as the values are not close to one, denoting therefore that there is no multicollinearity. It is concluded that the variables are independent between each other and do not cover for similar drivers in stock returns.

5 Empirical Results

In this section, the results obtained on the performance of the portfolios are reported. It is subdivided in the evaluation of the performance of the top and bottom portfolios in both an equally and value-weighted approach. All the other portfolios results are presented in Appendices A to F. For each portfolio the estimation results are presented using the Carhart (1997) four-factor model and the Fama & French (2018) six-factor model with the additional NMG factor. For each of these two models are used as benchmarks the Standard & Poor's Global 1200 and the Dow Jones Sustainability Index World. Given this, for each portfolio there are eight regression estimation results. The results are presented using the equally-weighted approach, mentioned as (EW), and using the value-weighted approach, mentioned as (VW). The Carhart (1997) four-factor model with the NMG factor, using the Standard & Poor's Global 1200, the general benchmark, is mentioned as 5 and using the Dow Jones Sustainability Index World, the green benchmark, is mentioned as 5G. The Fama & French (2018) six-factor model with the NMG factor, using the Standard & Poor's Global 1200 is mentioned as 7 and using the Dow Jones Sustainability Index World is mentioned as 7G.

For each result the alpha and all the risk factors estimates are presented, alongside with their statistical significance and standard errors. Additionally the number of observations, the R-squared, the Adjusted R-squared, the Residual Standard Error, the White's Heteroskedasticity Test and the Breush-Godfrey Autocorrelation Test results are displayed. All of these statistical measures allow to take inferences on the results obtained.

5.1 Portfolio A

Table 5.1 presents the estimation results for Portfolio A.

The results presented take into account the White's Heteroskedasticity Test and the Breush-Godfrey Autocorrelation Test results. Looking at these, it is concluded, that heteroskedasticity and autocorrelation are present in the regressions outputs. Therefore, it is implemented the Newey & West (1987) estimator, in order to achieve heteroskedasticity and autocorrelation consistent results. Given this, the estimates presented and analyzed already consider this correction.

Observing the alpha, abnormal return, on both approaches, it is observed statistical significance at the 1% level for the models that use the green benchmark. These are negative, denoting a bad performance, when compared to an index that comprises top sustainable firms, which this portfolio should mimic. With the general benchmark, the abnormal returns are negative, using the equally-weighted approach, being lower than with the green benchmark. Looking at the value-weighted approach, these become insignificant, with the exception of the seven-factor model, that presents positive abnormal returns, despite being only at the 10% level.

Looking at the market risk it can be seen that in all the models its estimates are statistically significant at the 1% level, meaning efficient exposure of this portfolio to both benchmarks. The market risk estimates have higher values when exposed to the S&P 1200, compared to the DJSIW. This provides inference that, even though Portfolio A is composed by the top sustainable performing firms, it is more exposed to a general benchmark rather than a green benchmark.

The SMB factor provides significant results, using the green benchmark. These show significance, with the general benchmark, only when using the seven-factor model, with the value-weighted approach. This shows that the portfolio is mainly composed by small capitalization firms.

Considering the HML risk factor, it has significant negative results, denoting an higher amount of low book-to-market value firms. These change, in the seven-factor model, using

²Heteroskedasticity Test developed by White (1980).

³Breush-Godfrey Autocorrelation Test developed by Breusch (1978) and Godfrey (1978).

Table 5.1: Estimation results for Portfolio A

	Dependent variable:							
	Portfolio A							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	0.995*** (0.007)	0.955*** (0.018)			0.998*** (0.007)	0.990*** (0.018)		
$\beta_{DJSIW-RF}$			0.532*** (0.060)	0.487*** (0.052)			0.504*** (0.058)	0.486*** (0.052)
β_{SMB}	-0.0002 (0.0001)	0.0003 (0.0003)	0.003*** (0.001)	0.003*** (0.0005)	0.00002 (0.0001)	0.001** (0.0003)	0.002*** (0.0004)	0.002*** (0.0004)
β_{HML}	-0.001*** (0.0001)	-0.001*** (0.0003)	0.001 (0.001)	0.001 (0.0005)	-0.0002 (0.0001)	-0.002*** (0.0003)	0.002*** (0.0005)	-0.0003 (0.0005)
β_{RMW}					0.001*** (0.0002)	0.002*** (0.0005)	-0.005*** (0.001)	-0.003*** (0.001)
β_{CMA}					-0.001*** (0.0002)	0.005*** (0.001)	-0.005*** (0.001)	0.002** (0.001)
β_{MOM}	0.0002** (0.0001)	0.001*** (0.0002)	0.001 (0.001)	0.001*** (0.0004)	0.0003*** (0.0001)	0.001*** (0.0002)	0.0004 (0.0004)	0.001** (0.0004)
β_{NMG}	-0.213*** (0.010)	-0.249*** (0.011)	-0.103*** (0.039)	-0.089*** (0.021)	-0.204*** (0.010)	-0.234*** (0.011)	-0.112*** (0.035)	-0.101*** (0.017)
α_p	-0.0001* (0.00004)	0.0002 (0.0001)	-0.001*** (0.0002)	-0.001*** (0.0002)	-0.0001* (0.00004)	0.0002* (0.0001)	-0.001*** (0.0002)	-0.001*** (0.0002)
Observations	2,515	2,515	2,515	2,515	2,515	2,515	2,515	2,515
R ²	0.940	0.837	0.357	0.295	0.942	0.853	0.415	0.305
Adjusted R ²	0.940	0.836	0.356	0.293	0.942	0.852	0.413	0.302
Residual Std. Error	0.002	0.006	0.007	0.009	0.002	0.006	0.007	0.009
W Test ²	164.29	96.015	567.63	263.02	196.89	210.42	666.29	425.3
p-value	(<2.2e-16)	(1.452e-11)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)
BG Test ³	77.187	26.023	33.359	5.0314	86.828	34.981	43.872	5.9786
p-value	(3.251e-15)	(8.834e-07)	(1.133e-07)	(0.004121)	(< 2.2e-16)	(1.518e-08)	(2.459e-08)	(0.003083)

This table reports the estimation results for Portfolio A, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

the green benchmark and equally-weighted approach. But this model does not present the best goodness of fit. In fact, the model that presents the best fit, presents neutral, insignificant estimates for this factor.

The RMW and CMA risk factors provide statistically significant results in all models, at the 1% level. The RMW estimates are positive with the general benchmark and negative with the green benchmark. The CMA estimates are negative with the equally-weighted approach and positive with the value-weighted approach. This means that it should be considered

the model with the best fit to analyze these. This model shows a positive RMW estimate, meaning a greater amount of robust profitability firms in the portfolio. The CMA estimate is negative, denoting an aggressive investment style.

MOM estimates are significant for all models, with the exception of the models using the green benchmark and equally-weighted approach. These significant results, are positive, denoting the influence of past positive performance on the returns of the portfolio.

As expected, the NMG factor presents statistically significant results at 1% level, in all the models. These are negative, representing the expected results of its inclusion, the portfolios effectively provide protection against environmental related risks, as these have direct influence on the portfolio returns. The abundance of highly performing environmental firms, represents a significant part of the excess returns of the portfolio.

The models using the general benchmark and the equally-weighted approach present the best goodness of fit to the data, an R^2 higher than 90%, as well with a lower residual standard error of 0.002. The R^2 value increases with the addition of factors. The NMG factor does have a considerable influence in the returns, meaning as de Haan et al. (2012) advocate, the relationship between stock returns and environmental performance is significant. The Fama & French (2018) six-factor model, with the NMG factor, using the Standard & Poor's World 1200 and the equally-weighted approach provides the most reliable results.

5.2 Portfolio D-

Table 5.2 presents the estimation results for Portfolio D-.

As in Portfolio A, the results presented take into account the White's Heteroskedasticity Test and the Breush-Godfrey Autocorrelation Test results. The results point out that heteroskedasticity and autocorrelation are present in the regressions outputs. Therefore, it is implemented the Newey & West (1987) estimator, in order to achieve heteroskedasticity and autocorrelation consistent results. Given this, the estimates presented and analyzed

already consider this correction.

Portfolio D- presents negative significant abnormal returns, with the green benchmark, at the 1% level, and with the general benchmark and equally-weighted approach, at the 10% level. The models with the general benchmark and value-weighted approach present positive estimates, without a significant expression. Looking at the models with the best explanatory power, it can be concluded that this portfolio has a neutral performance, as the negative and positive values are very small.

Table 5.2: Estimation results for Portfolio D-

	Dependent variable:							
	Portfolio D-							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	0.995*** (0.007)	0.955*** (0.018)			0.998*** (0.007)	0.990*** (0.018)		
$\beta_{DJSIW-RF}$			0.532*** (0.060)	0.487*** (0.052)			0.504*** (0.058)	0.486*** (0.052)
β_{SMB}	-0.0002 (0.0001)	0.0003 (0.0003)	0.003*** (0.001)	0.003*** (0.0005)	0.00002 (0.0001)	0.001** (0.0003)	0.002*** (0.0004)	0.002*** (0.0004)
β_{HML}	-0.001*** (0.0001)	-0.001*** (0.0003)	0.001 (0.001)	0.001 (0.0005)	-0.0002 (0.0001)	-0.002*** (0.0003)	0.002*** (0.0005)	-0.0003 (0.0005)
β_{RMW}					0.001*** (0.0002)	0.002*** (0.0005)	-0.005*** (0.001)	-0.003*** (0.001)
β_{CMA}					-0.001*** (0.0002)	0.005*** (0.001)	-0.005*** (0.001)	0.002** (0.001)
β_{MOM}	0.0002** (0.0001)	0.001*** (0.0002)	0.001 (0.001)	0.001*** (0.0004)	0.0003*** (0.0001)	0.001*** (0.0002)	0.0004 (0.0004)	0.001** (0.0004)
β_{NMG}	0.787*** (0.010)	0.751*** (0.011)	0.897*** (0.039)	0.911*** (0.021)	0.796*** (0.010)	0.766*** (0.011)	0.888*** (0.035)	0.899*** (0.017)
α_p	-0.0001* (0.00004)	0.0002 (0.0001)	-0.001*** (0.0002)	-0.001*** (0.0002)	-0.0001* (0.00004)	0.0002* (0.0001)	-0.001*** (0.0002)	-0.001*** (0.0002)
Observations	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263
R ²	0.956	0.882	0.525	0.755	0.957	0.887	0.568	0.758
Adjusted R ²	0.956	0.882	0.524	0.754	0.957	0.887	0.566	0.757
Residual Std. Error	0.002	0.006	0.007	0.009	0.002	0.006	0.007	0.009
W Test ²	129.81	135.5	602.6	323.67	167.07	169.65	667.15	470.83
p-value	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)
BG Test ³	59.341	18.194	34.454	7.9199	67.536	26.463	47.097	9.4791
p-value	(1.663e-11)	(2.713e-05)	(1.933e-06)	(0.001607)	(3.334e-13)	(7.257e-07)	(5.429e-09)	(9.141e-04)

This table reports the estimation results for Portfolio D-, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Portfolio D- has an efficient exposure to the market benchmarks, allowing the inference

that changes in the returns of the portfolio are connected to changes in the returns of the benchmarks, with a much higher correlation with the Standard & Poor's 1200 World, as the values are very close to 1.

The SMB factor estimates are positive and significant for the models that use the green benchmark and the seven-factor model that uses the general benchmark and value-weighted approach. Despite this, the models with the greater explanatory power present no significant estimates, meaning an identical amount of small and big-capitalization firms in the portfolio.

Looking at the book-to-market value estimates, there are negative and positive significant results. But the model that gives positive estimates is the one with the lower explanatory power. It can, therefore, be concluded that there are mainly low book-to-market value firms in this portfolio.

The RMW estimates are positive for the general benchmark and negative for the green benchmark. Observing the models with the best fit to the data, the ones with the general benchmark, it can be concluded that the portfolio is mainly composed by robust profitability firms.

The investment style of the majority of firms in the portfolio is aggressive, accordingly to the equally-weighted approach, and conservative, accordingly to the value-weighted approach, demonstrating the divergences of portfolio construction approaches.

Past performance does seem to have a positive influence in this portfolio returns, as momentum estimates from the models with best explanatory power are statistically significant.

The NMG factor presents positive significant results, meaning that this portfolio is exposed to environmental performance related risks and these have a big influence on the financial performance of the firms that compose this portfolio. This means that in order to compensate investors for this risk these firms provide higher returns.

The models that present the best explanatory power are the five and seven-factor model

that use the equally-weighted construction approach and the Standard & Poor's 1200 World index as benchmark, presenting an R^2 higher than 95% and a residual standard error of 0.2%.

5.3 Discussion of Results

The results achieved for all portfolios allow to take overall inferences on the differences achieved by using different weighting construction schemes, different benchmarks and models. It also shows what the NMG factor adds to the models used and if the performance of firms is improved by their environmental concerns.

The general benchmark is more appropriate for most portfolios, denoting that firms follow the trends of the general market, as their correlation to this benchmark is high. The Dow Jones Sustainability Index World fails to properly capture the performance of top sustainable firms, much likely due to being constructed based on long-term criteria, whereas the portfolios created are made using short-term financial and environmental indicators. The portfolios better represented by this benchmark are Portfolios B- and C-, which are intermediate scored portfolios, that denotes the divergences in the evaluation of environmental performance, as firms with higher environmental scores are not consensual across rankings. The Standard & Poor's 1200 World demonstrates that its inclusion of 70% of the global market capitalization, provides a good representation of all the portfolios, which were constructed with firms from all over the world.

The weighting approach for the construction of the portfolios leads to a bigger divergence between results. In general, the models explain better the portfolios build using the equally-weighted approach. This means that the market value of the firms that compose portfolios A, B- and D- is not as properly represented by the market, as the other portfolios. The portfolios constructed using the value-weighted approach present the best explanatory power for Portfolio A-, B and D, demonstrating that the market value of the firms that com-

pose these portfolios has a substantial impact on their returns. The remaining portfolios, C and C-, have similar results on both approaches, in the sense that the explanatory power from one approach to the other does not present substantial differences. Both construction approaches present a better representation for each portfolio, meaning therefore, each has an equal importance when analyzing firm performance.

The lower explanatory power of some models could be explained by the companies present in those portfolios, as they could be not well represented by the benchmarks used. Also these models correspond to the intermediate portfolios, in which the inclusion of the NMG factor was not expected to provide much of an impact.

The size of the firms present in this research does not have a substantial impact on the final results. Despite some portfolios demonstrating a majority of small-capitalization firms, it does not seem to have a linear relationship with their financial performance based on their environmental score. The book-to-market value of each corporation does not present any divergence leading to a better financial performance, demonstrating an equilibrium of growth and value stocks in the portfolios. The robust profitability of the firms present on the top and bottom portfolios, demonstrates that these firms have an efficient use of resources, making them better prepared to face environmental related risks. Firms in extreme portfolios have an aggressive investment style, denoting these can somehow be affected by worst management decisions. Despite having positive momentum estimates, the top and bottom portfolios do not demonstrate a positive performance.

The Non-Green Minus Green factor demonstrates the importance of environmental related risks, as Portfolio A and Portfolio A- present negative estimates that show the firms present in these, effectively function as a hedge against these risks. For Portfolio D and Portfolio D-, this factor has positive estimates, meaning that it provides extra reimbursement for investors, in order to compensate them for holding stocks that might not meet their environmental preferences. The intermediate Portfolios B, B-, C and C- demonstrate, through their non-significant estimates, that environmental related risks do not present a

big driver in their performance. Given this, as advocated by de Haan et al. (2012), investors' preferences do seem to have an impact on the returns of firms, as lower environmentally scored portfolios provide higher returns, so as to compensate investors for their poorer climate change performance. Top scored firms show the impact of these scores, with the higher demand pushing its stock prices up and therefore providing lower returns.

Looking at the abnormal returns, there is not much value left to consider any additional drivers on the performance of the portfolios. If, only the models with the best explanatory power are considered, the top and bottom portfolios, Portfolio A and D-, present negative abnormal returns, despite these being significant only at the 10% level. The remaining portfolios also demonstrate neutral abnormal returns. This leaves the suggestion that holding stocks from the environmental best and worst performing firms does not allow investors to achieve abnormal returns, based only on non-systematic risk. From this it can be concluded that, despite pleasing investors' environmental standards, Portfolio A is unable to provide higher returns than the worst environmentally rated portfolios.

Answering the main question, posed on the title of this dissertation it can be concluded that a greater environmental concern does not lead to improved financial performance. Moreover, when a factor that considers environmental related risks, such as, investors' preferences for higher sustainable performing stocks, the impact of this performance is not displayed in the abnormal returns a firm achieves, denoting this can be considered a systematic risk factor, as any abnormal return is absorbed by this factor.

6 Conclusion

This research aims to find whether there is a relationship between environmental and financial performance. Mainly, its objective is to find if firms with greater environmental concerns achieve a better financial performance. Using a database, that evaluates companies all over the world, based on their climate change performance, CDP's The A List (2020). The scores from this ranking are attributed based on the answer to a self-report survey, with an ensuring third party verification standard. To perform the study, the models used are the Carhart (1997) four-factor model and the Fama & French (2018) six-factor model, as these have proven to be the models that best capture systematic risk. Since this research concerns the evaluation of the relationship between environmental and financial performance, it is constructed an additional factor, NMG, to control for the possibility of the impact of environmental related risks on the financial returns of firms.

To analyze the financial performance of firms, eight portfolios are constructed based on the classification each firm obtains on CDP's The A List (2020), A, A-, B, B-, C, C-, D and D-. These portfolios are constructed using an equally and value-weighted approach, in order not to condition the results based on its construction method. As benchmarks are used a general one, that represents 70% of the global market capitalization, and a green one, that comprises the top 10% sustainable companies in the world.

The results obtained show that a higher environmental concern does not lead to better financial performance. These also demonstrate that the inclusion of an additional factor that considers environmental related risks, such as investors' preferences, makes firms lose their expected abnormal returns. Portfolios with lower scores are expected to provide higher returns in order to compensate investors for holding stocks from firms with dubious environmental reputation, but these disappear with the inclusion of the NMG factor, as its

estimates capture this compensation. In the portfolios with higher scores, the opposite happens, the NMG factor estimates capture the lower returns these would have due to their exceeding demand that would push these firms stock price excessively high. Both top and low scored portfolios have negative abnormal returns, but only significant at the 10% level. The intermediate scored portfolios demonstrate neutral abnormal returns, denoting the lower exposure and therefore lower impact from environmental related risks.

The result of the relationship between environmental and financial performance goes in accordance with Renneboog et al. (2008) and Liston (2016), as portfolios lose their abnormal returns when exposed to a factor that captures environmental related risks. Alongside with this, the expectancy of the influence of investors' taste is confirmed, consistent with many studies, such as, Merton (1987), Heinkel et al. (2001), Fama & French (2007), Galema et al. (2008), Hong & Kacperczyk (2009) and de Haan et al. (2012).

This research follows up with previous studies, complementing the previously achieved results on the relationship between environmental and financial performance, with a database that comprises firms from all over the world, demonstrating the importance of environmental related risks, namely investors' preferences.

One limitation regarding this research is the dataset, as its ranking is not a comprehensive metric of a company's level of sustainability, it is an indication of the level of action taken by the company to assess and manage its climate change impacts. The usage of a ranking that would have a quantitative evaluation of a firm environmental action would be a more appropriate option to evaluate firms based on their environmental performance. Also, the usage of unconditional models does not allow to take inferences on the performance of firms when considering the evolution of the economy. It would therefore be interesting to use conditional models, so as to consider public information variables.

7 References

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Appendices

Appendix A - Portfolio A- Estimation Results

Portfolio A-

Table 1: Estimation results for Portfolio A-

	Dependent variable:							
	Portfolio A-							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	1.013*** (0.054)	1.093*** (0.043)			1.049*** (0.059)	1.116*** (0.047)		
$\beta_{DJSIW-RF}$			0.547*** (0.076)	0.558*** (0.078)			0.531*** (0.075)	0.549*** (0.079)
β_{SMB}	0.0001 (0.001)	0.001 (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.0004 (0.001)	0.001 (0.001)	0.002* (0.001)	0.002** (0.001)
β_{HML}	0.002* (0.001)	0.001* (0.001)	0.003*** (0.001)	0.003*** (0.001)	0.001 (0.001)	0.0001 (0.001)	0.003*** (0.001)	0.002*** (0.001)
β_{RMW}					0.002 (0.001)	0.001 (0.001)	-0.004** (0.002)	-0.004*** (0.001)
β_{CMA}					0.003* (0.001)	0.003*** (0.001)	-0.001 (0.002)	-0.0002 (0.001)
β_{MOM}	0.0004 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.0004 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
β_{NMG}	0.148** (0.071)	-0.091*** (0.025)	0.259*** (0.083)	0.092*** (0.029)	0.145** (0.071)	-0.081*** (0.025)	0.240*** (0.082)	0.068*** (0.025)
α_p	-0.0004 (0.0004)	0.0001 (0.0002)	-0.001** (0.0004)	-0.001** (0.0003)	-0.0004 (0.0004)	0.0001 (0.0002)	-0.001** (0.0004)	-0.001** (0.0003)
Observations	2,263	2,263	2,263	2,263	2,263	2,263	2,263	2,263
R ²	0.718	0.882	0.239	0.368	0.721	0.885	0.245	0.372
Adjusted R ²	0.717	0.881	0.237	0.366	0.719	0.884	0.242	0.370
Residual Std. Error	0.009	0.007	0.014	0.011	0.009	0.007	0.014	0.011
W Test ²	163.8	194.04	227.94	390.78	183.1	229.74	231.71	417.59
p-value	(1.225e-14)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)
BG Test ³	2.4862	7.5394	6.883	13.424	2.5814	8.0335	7.4079	15.002
p-value	(0.007786)	(0.001835)	(0.002295)	(1.971e-03)	(0.007642)	(0.001544)	(0.00192)	(1.035e-03)

This table reports the estimation results for Portfolio A-, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Appendix B - Portfolio B Estimation Results

Portfolio B

Table 2: Estimation results for Portfolio B

	Dependent variable:							
	Portfolio B							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	0.936*** (0.030)	1.266*** (0.041)			0.958*** (0.032)	1.261*** (0.041)		
$\beta_{DJSIW-RF}$			0.563*** (0.059)	0.627*** (0.069)			0.545*** (0.056)	0.608*** (0.068)
β_{SMB}	-0.0002 (0.0005)	0.002*** (0.001)	0.002*** (0.001)	0.005*** (0.001)	0.0001 (0.001)	0.001** (0.001)	0.001** (0.001)	0.003*** (0.001)
β_{HML}	0.001*** (0.0005)	0.002*** (0.0005)	0.003*** (0.001)	0.004*** (0.001)	0.001 (0.001)	0.002*** (0.001)	0.003*** (0.001)	0.005*** (0.001)
β_{RMW}					0.001* (0.001)	-0.001 (0.001)	-0.004*** (0.001)	-0.007*** (0.001)
β_{CMA}					0.001* (0.001)	0.001 (0.001)	-0.002* (0.001)	-0.003** (0.001)
β_{MOM}	-0.0004 (0.0004)	0.0002 (0.0004)	-0.0001 (0.001)	0.0003 (0.001)	-0.0004 (0.0004)	0.0001 (0.0004)	-0.0002 (0.0005)	0.0002 (0.001)
β_{NMG}	0.119*** (0.041)	-0.016 (0.019)	0.222*** (0.051)	0.198*** (0.031)	0.119*** (0.041)	-0.019 (0.019)	0.206*** (0.050)	0.150*** (0.026)
α_p	-0.0004* (0.0002)	0.0002 (0.0002)	-0.001*** (0.0003)	-0.001*** (0.0003)	-0.0003* (0.0002)	0.0002 (0.0002)	-0.001*** (0.0003)	-0.001*** (0.0003)
Observations	2,515	2,515	2,515	2,515	2,515	2,515	2,515	2,515
R ²	0.507	0.525	0.208	0.258	0.509	0.525	0.221	0.279
Adjusted R ²	0.506	0.524	0.207	0.256	0.508	0.524	0.219	0.277
Residual Std. Error	0.010	0.011	0.012	0.014	0.010	0.011	0.012	0.014
W Test ²	212.68	304.03	192.96	240.47	232.38	323.37	259.39	404.08
p-value	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)
BG Test ³	8.8075	17.835	8.7396	8.3479	9.4211	17.525	11.167	10.14
p-value	(0.00117)	(3.161e-05)	(0.001199)	(0.001381)	(9.34e-03)	(3.605e-05)	(4.816e-03)	(7.137e-03)

This table reports the estimation results for Portfolio B, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Appendix C - Portfolio B- Estimation Results

Portfolio B-

Table 3: Estimation results for Portfolio B-

	Dependent variable:							
	Portfolio B-							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	0.934*** (0.075)	0.856*** (0.072)			0.956*** (0.064)	0.883*** (0.066)		
$\beta_{DJSIW-RF}$			0.998*** (0.048)	0.891*** (0.056)			1.024*** (0.049)	0.918*** (0.057)
β_{SMB}	0.001 (0.001)	0.0001 (0.001)	0.001 (0.001)	0.0001 (0.001)	0.001 (0.001)	0.00003 (0.001)	0.001 (0.001)	0.0001 (0.001)
β_{HML}	-0.0003 (0.001)	-0.003*** (0.001)	-0.001 (0.001)	-0.003*** (0.001)	-0.001 (0.001)	-0.005*** (0.001)	-0.001** (0.001)	-0.005*** (0.001)
β_{RMW}					0.0003 (0.001)	-0.001 (0.001)	0.001 (0.001)	-0.0003 (0.001)
β_{CMA}					0.002** (0.001)	0.004*** (0.001)	0.002*** (0.001)	0.004*** (0.001)
β_{MOM}	-0.001** (0.001)	0.0001 (0.001)	-0.001** (0.0005)	0.0002 (0.001)	-0.001** (0.001)	0.0001 (0.001)	-0.001** (0.0005)	0.0003 (0.001)
β_{NMG}	-0.009 (0.058)	-0.022 (0.026)	0.054 (0.046)	-0.007 (0.024)	-0.021 (0.059)	-0.026 (0.026)	0.044 (0.046)	-0.005 (0.024)
α_p	-0.001 (0.0004)	-0.001* (0.0004)	-0.0003 (0.0003)	-0.001* (0.0004)	-0.0004 (0.0004)	-0.001 (0.0004)	-0.0001 (0.0003)	-0.001 (0.0004)
Observations	1,005	1,005	1,005	1,005	1,005	1,005	1,005	1,005
R ²	0.626	0.554	0.534	0.428	0.629	0.565	0.539	0.439
Adjusted R ²	0.622	0.550	0.532	0.425	0.624	0.561	0.536	0.435
Residual Std. Error	0.008	0.009	0.007	0.008	0.008	0.009	0.007	0.008
W Test ²	177.86	71.283	80.644	53.88	202.93	93.417	110.93	71.874
p-value	(<2.2e-16)	(2.185e-07)	(6.299e-09)	(1.028e-03)	(<2.2e-16)	(5.399e-07)	(1.456e-09)	(3.523e-03)
BG Test ³	18.308	9.7603	6.5185	3.4876	18.334	9.8156	6.5437	3.7195
p-value	(2.584e-05)	(8.232e-04)	(0.00259)	(0.006253)	(2.556e-05)	(8.063e-04)	(0.002568)	(0.005905)

This table reports the estimation results for Portfolio B-, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Appendix D - Portfolio C Estimation Results

Portfolio C

Table 4: Estimation results for Portfolio C

	Dependent variable:							
	Portfolio C							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	0.965*** (0.030)	1.336*** (0.047)			0.994*** (0.030)	1.348*** (0.046)		
$\beta_{DJSIW-RF}$			0.558*** (0.063)	0.625*** (0.078)			0.541*** (0.061)	0.609*** (0.085)
β_{SMB}	0.0001 (0.0004)	0.0004 (0.001)	0.003*** (0.001)	0.004*** (0.001)	0.0004 (0.0004)	0.001 (0.001)	0.002*** (0.001)	0.002*** (0.001)
β_{HML}	0.0004 (0.0003)	0.001 (0.001)	0.002*** (0.001)	0.003*** (0.001)	-0.0002 (0.0004)	0.0002 (0.001)	0.002*** (0.001)	0.003*** (0.001)
β_{RMW}					0.002*** (0.001)	0.001 (0.001)	-0.004*** (0.001)	-0.006*** (0.001)
β_{CMA}					0.002*** (0.001)	0.001 (0.001)	-0.002* (0.001)	-0.002* (0.001)
β_{MOM}	-0.001 (0.0003)	0.001 (0.0005)	-0.0002 (0.001)	0.001 (0.001)	-0.001 (0.0004)	0.001 (0.0005)	-0.0004 (0.0005)	0.001 (0.001)
β_{NMG}	-0.023 (0.037)	-0.125*** (0.023)	0.083* (0.049)	0.103*** (0.029)	-0.024 (0.037)	-0.119*** (0.022)	0.067 (0.047)	0.064** (0.026)
α_p	-0.0002 (0.0001)	0.001*** (0.0002)	-0.001*** (0.0002)	-0.001** (0.0003)	-0.0001 (0.0001)	0.001*** (0.0002)	-0.001*** (0.0002)	-0.001** (0.0003)
Observations	2,515	2,515	2,515	2,515	2,515	2,515	2,515	2,515
R ²	0.561	0.560	0.259	0.212	0.565	0.561	0.275	0.228
Adjusted R ²	0.560	0.559	0.258	0.211	0.564	0.559	0.273	0.226
Residual Std. Error	0.008	0.010	0.010	0.014	0.008	0.010	0.010	0.013
W Test ²	467.02	434.77	319.16	220.51	564.51	460.36	428.14	431.37
p-value	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)
BG Test ³	25.042	31.848	8.9082	14.241	25.118	32.998	8.0753	13.748
p-value	(1.367e-06)	(6.368e-08)	(0.001128)	(1.415e-04)	(1.322e-05)	(3.766e-08)	(0.001521)	(1.729e-04)

This table reports the estimation results for Portfolio C, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Appendix E - Portfolio C- Estimation Results

Portfolio C-

Table 5: Estimation results for Portfolio C-

	Dependent variable:							
	Portfolio C-							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	1.085*** (0.115)	0.402*** (0.105)			1.088*** (0.114)	0.412*** (0.097)		
$\beta_{DJSIW-RF}$			1.111*** (0.096)	0.408*** (0.099)			1.118*** (0.098)	0.417*** (0.089)
β_{SMB}	0.002*** (0.001)	-0.0001 (0.001)	0.002*** (0.001)	-0.00005 (0.001)	0.002*** (0.001)	-0.0001 (0.001)	0.002*** (0.001)	-0.0001 (0.001)
β_{HML}	0.002*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.003*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002*** (0.001)	0.002** (0.001)
β_{RMW}					-0.0003 (0.001)	-0.001 (0.001)	0.0004 (0.001)	-0.001 (0.001)
β_{CMA}					0.001 (0.001)	0.002 (0.002)	0.001 (0.001)	0.002 (0.001)
β_{MOM}	-0.002** (0.001)	-0.002* (0.001)	-0.002*** (0.001)	-0.002* (0.001)	-0.002** (0.001)	-0.002* (0.001)	-0.002*** (0.001)	-0.002* (0.001)
β_{NMG}	-0.172* (0.096)	-0.078*** (0.029)	-0.100 (0.076)	-0.070** (0.028)	-0.176* (0.098)	-0.083*** (0.029)	-0.102 (0.073)	-0.071** (0.029)
α_p	0.0004 (0.001)	-0.003*** (0.001)	0.001 (0.0004)	-0.003*** (0.001)	0.0005 (0.001)	-0.003*** (0.001)	0.001 (0.0005)	-0.003*** (0.001)
Observations	1,005	1,005	1,005	1,005	1,005	1,005	1,005	1,005
R ²	0.581	0.520	0.550	0.532	0.581	0.522	0.551	0.534
Adjusted R ²	0.578	0.515	0.548	0.527	0.578	0.516	0.547	0.527
Residual Std. Error	0.009	0.010	0.008	0.010	0.009	0.010	0.008	0.010
W Test ²	537.3	104.22	488.53	101.65	546.26	124.75	504.36	120.43
p-value	(<2.2e-16)	(5.14e-13)	(<2.2e-16)	(1.471e-12)	(<2.2e-16)	(1.022e-11)	(<2.2e-16)	(4.941e-11)
BG Test ³	12.336	30.014	8.1638	30.512	12.019	27.992	8.2359	28.619
p-value	(3.046e-04)	(1.466e-05)	(0.001474)	(1.169e-05)	(3.453e-04)	(3.653e-05)	(0.001437)	(2.754e-05)

This table reports the estimation results for Portfolio C-, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Appendix F - Portfolio D Estimation Results

Portfolio D

Table 6: Estimation results for Portfolio D

	Dependent variable:							
	Portfolio D							
	5(EW)	5(VW)	5G(EW)	5G(VW)	7(EW)	7(VW)	7G(EW)	7G(VW)
$\beta_{S\&P1200-RF}$	1.015*** (0.032)	1.471*** (0.028)			1.020*** (0.029)	1.456*** (0.029)		
$\beta_{DJSIW-RF}$			0.553*** (0.065)	0.681*** (0.078)			0.526*** (0.060)	0.653*** (0.080)
β_{SMB}	0.003*** (0.0003)	0.003*** (0.0004)	0.006*** (0.001)	0.007*** (0.001)	0.003*** (0.0003)	0.003*** (0.0004)	0.004*** (0.0005)	0.005*** (0.001)
β_{HML}	0.0002 (0.0003)	-0.002*** (0.001)	0.002*** (0.001)	0.001 (0.001)	0.0004 (0.0004)	-0.001* (0.001)	0.003*** (0.001)	0.002* (0.001)
β_{RMW}					0.001 (0.0005)	-0.001 (0.001)	-0.006*** (0.001)	-0.008*** (0.002)
β_{CMA}					-0.0004 (0.001)	-0.002** (0.001)	-0.004*** (0.001)	-0.006*** (0.002)
β_{MOM}	-0.0002 (0.0003)	0.002*** (0.0004)	0.0002 (0.001)	0.002** (0.001)	-0.0001 (0.0003)	0.002*** (0.0004)	0.00003 (0.001)	0.002** (0.001)
β_{NMG}	0.037 (0.038)	0.110*** (0.017)	0.148*** (0.055)	0.362*** (0.036)	0.040 (0.038)	0.104*** (0.017)	0.133*** (0.051)	0.302*** (0.029)
α_p	0.0002 (0.0001)	0.001*** (0.0002)	-0.001** (0.0002)	-0.0002 (0.0003)	0.0002 (0.0001)	0.001*** (0.0002)	-0.001** (0.0002)	-0.0001 (0.0002)
Observations	2,515	2,515	2,515	2,515	2,515	2,515	2,515	2,515
R ²	0.674	0.686	0.317	0.351	0.674	0.687	0.351	0.380
Adjusted R ²	0.673	0.685	0.316	0.350	0.673	0.686	0.349	0.378
Residual Std. Error	0.007	0.010	0.010	0.014	0.007	0.010	0.009	0.014
W Test ²	609.09	198.71	609.16	256.37	638.75	256.32	602.25	338.07
p-value	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)	(<2.2e-16)
BG Test ³	16.54	15.61	16.239	8.0494	16.116	15.008	17.91	5.9639
p-value	(0.00546)	(8.049e-05)	(0.006195)	(0.001535)	(0.006522)	(1.033e-04)	(0.003061)	(0.003098)

This table reports the estimation results for Portfolio D, using the Carhart (1997) four-factor model, represented as 5, and the Fama & French (2018) six-factor model, represented as 7, with both having the additional NMG factor. It is used the equally-weighted approach, identified as (EW), and value-weighted approach, identified as (VW). As benchmarks it is used the Standard and Poor's World 1200, without a specific representation, and the Dow Jones Sustainability Index World, that is represented as G. ***, ** and * indicate statistical significance at 1%, 5% and 10% level, respectively.

Appendix G - Portfolio's Constituents

Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1&1 Drillisch AG	-	-	-	-	-	-	D-	D-	-	-
3i Group	-	D	E	D	C	D	A-	A-	B	-
3M Company	B	C	C	D	C	C	A-	A-	B	B
3Sbio	-	-	-	-	-	-	-	-	-	B-
888 Holdings	-	-	-	-	-	-	C-	-	-	-
A.G. Barr Plc	-	-	-	-	D	E	D	D	D	C
A.P. Moller - Maersk	B	C	C	B	C	D	D	-	C	B
A2A	C	C	B	B	B	C	A-	B	B-	B-
AA	-	-	-	-	-	-	-	-	B-	B-
AAC Technologies Holdings	-	-	E	D	-	-	-	-	-	-
Aalberts Industries	-	-	-	-	-	-	-	-	B-	B
Aareal Bank AG	-	-	D	B	B	C	B	C	B-	C
ABB	C	C	D	B	-	D	B	C	C	B
Abbott Laboratories	B	C	B	B	B	B	A-	B	B	A-
AbbVie Inc	-	-	-	-	C	D	A-	A-	B	B
Abengoa	-	B	A	A	A	A	A	-	-	-
Abercrombie & Fitch Co.	-	D	B	B	C	C	C	C	-	D
Aberdeen Asset Management	-	-	-	-	-	C	B	-	-	-
Abertis Infraestructuras	-	-	-	-	-	-	A	B	B	-
ABN Amro Holding	-	-	-	-	-	-	D	B	B	B
Aboitiz Equity Ventures	-	-	-	-	-	-	-	D-	D-	D-
Aboitiz Power Corporation	-	-	-	-	-	-	-	-	D-	-
Absa Group Limited	C	B	B	B	B	B	B	B	C	C

Continued on next page

Table 7 – continued from previous page

Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Acacia Mining	-	-	-	-	-	E	D	C	D	D
ACC	-	-	-	-	-	-	B	B	B	B
Accenture	B	B	B	-	A	A	A	A-	A	A
ACCIONA S.A.	B	A	A	A	A	A	A	A	A-	A
AccorHotels	C	D	B	B	C	C	C	A-	B	A-
ACEA SpA	-	C	C	-	B	B	A-	A-	B	A-
Acer Inc.	-	C	-	-	B	B	B	B	B	B
Acerinox	-	-	B	D	A	B	B	B	B	C
Achilles Corporation	-	-	-	-	-	-	D-	-	-	-
ACS Actividades de Construccion y Servicios	C	E	-	D	D	D	D	-	-	C
Actiontec Electronics	-	-	-	-	-	E	D	D	D	D
Acuity Brands Inc	-	-	-	-	-	-	-	D	-	D
Adani Ports & Special Economic Zone	-	-	-	-	-	-	-	-	-	C
Adcock Ingram	C	E	D	D	E	-	-	-	-	-
Adecco Group AG	-	E	E	D	C	D	C	C	D	C
Adelaide Brighton	-	D	-	-	-	-	-	-	-	-
adidas AG	-	C	B	B	B	B	B	B	B	B
Admiral Group	D	-	-	D	-	-	-	-	-	-
Adobe Systems, Inc.	B	C	B	A	A	A	A-	A	-	-
Adobe, Inc.	-	-	-	-	-	-	-	-	A	A
ADP (Aeroports de Paris)	-	-	-	C	A-	B	B	B	B	C
ADVA Optical Networking SE	-	-	E	-	-	E	D	D	B-	B
Advanced Info Service	-	-	-	-	-	-	D-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Advanced Micro Devices, Inc	C	D	C	C	-	C	B-	B-	C	B
Advantech Co, Ltd.	-	-	-	-	-	E	B	B-	B	B
Advantest Corporation	-	E	E	-	E	-	D-	C-	C	C
AECI Ltd Ord	-	C	D	B	B	C	B	B	-	B
Aegon	C	D	C	B	C	C	C	C	C	C
AENA SA	-	-	-	-	-	-	-	B	-	-
AENA SME SA	-	-	-	-	-	-	-	-	B	A
Aeon Co., Ltd.	D	D	B	B	A	B	A-	B	B	A
Aeon Delight Co., Ltd.	-	-	-	-	-	-	D-	D-	-	-
Aeon Mall Co., Ltd.	-	-	-	-	-	-	-	C	B	B
Aeroflot	-	-	-	-	-	-	-	D	D	D
AES Tiete Energia SA	-	-	-	-	-	-	-	C	C	C
AES Tiete SA	-	-	-	-	D	D	C	-	-	-
Aetna Inc.	D	E	-	D	E	E	-	-	C	-
ÅF AB	-	D	D	D	D	D	C	C	-	B
ÅF Pöyry AB	-	-	-	-	-	-	-	-	B	-
Affiliated Managers Group	-	-	-	-	-	-	-	-	B-	B
AFK Sistema JFSC	-	-	-	-	-	-	-	D-	-	-
AFLAC Incorporated	C	E	B	B	B	C	B	B	B	C
African Rainbow Minerals	-	-	C	B	B	B	B	B	A-	-
AGC Inc.	-	-	D	B	C	D	C	C	B	B
Aggreko	-	-	-	-	-	E	C	D	D	-
Agilent Technologies Inc.	-	C	C	B	D	C	C	B	A-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
AGL Energy	-	-	-	B	B	B	B	B	B	B
Agnico-Eagle Mines Limited	-	-	-	D	-	E	D	D	D	C
Agrium Inc.	-	-	C	C	C	C	-	-	-	-
Aguas Andinas SA	-	-	-	-	-	-	-	C	C	A-
Ahlstrom Corporation	-	-	-	C	B	D	C	D	-	-
Ahold Delhaize	B	-	C	B	C	C	C	C	C	C
AIA Group Ltd.	-	-	-	-	-	-	C-	C	C	C
AIB Group Plc	-	-	-	-	-	B	A-	A	A	A-
Aica Kogyo Co Ltd	-	-	-	-	-	-	-	-	-	D
Aimia Inc.	-	-	E	D	C	B	B	C	C	-
Air Canada	-	-	-	-	B	B	B	C	C	C
Air France - KLM	-	B	B	A	C	B	B	B	B	C
Air Liquide	B	B	C	B	B	B	B	A-	A-	A
Air New Zealand	-	-	D	D	C	-	-	-	-	-
Air Products & Chemicals, Inc.	B	A	B	B	A-	B	A-	B	B	D
Air Water Inc.	-	-	-	-	-	-	-	D	B-	A-
Airbus	B	D	C	B	B	C	B	D	B	B
Aisin Seiki Co., Ltd.	-	C	D	C	C	B	B-	-	D	A-
Aixtron SE	-	-	-	-	-	-	D	D	D-	D
Ajinomoto Co.Inc.	-	D	D	-	C	B	B	A-	A-	B
AK Steel Holding Corporation	-	-	-	-	-	-	-	-	C	C
Akamai Technologies Inc	C	C	C	B	A	B	B	B	A-	C
Akbank T.A.Ş	B	C	-	B	D	C	B	C	D	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Akçansa Çimento Sanayi ve Ticaret A.Ş.	-	-	-	-	-	D	B	B-	D	B
Akenerji Elektrik Üretim A.Ş.	-	-	-	-	C	C	B	B	C	B
Aker ASA	-	-	-	-	D	-	-	C	D	B-
Aker BP ASA	-	-	-	-	-	D	C	B	B	B
Aksa Akrilik Kimya Sanayii A.Ş.	-	-	-	-	-	-	-	-	-	B-
Aktia Bank Plc	-	-	-	-	-	-	-	D-	D-	B
AkzoNobel	B	B	C	B	B	B	A	A-	C	-
Alaska Air Group	-	-	-	-	-	-	C-	C	C	C
Alaska Power & Telephone Company	-	-	-	-	-	D	-	-	-	-
Albaraka Türk Katılım Bankası A.Ş.	-	-	-	-	-	-	-	C	C	B
Alcatel - Lucent	B	A	B	C	B	A	-	-	-	-
Alcoa Corp.	-	-	-	-	-	-	A-	C	B	B-
ALD SA	-	-	-	-	-	-	-	-	D	D
Alfa Laval Corporate AB	-	-	-	-	-	-	-	C	-	C
Alfa SAB de CV	-	-	-	-	-	-	-	-	-	D
Alfresa Holdings Corporation	-	-	-	-	-	-	-	-	-	D-
Algonquin Power & Utilities Corporation	-	-	E	-	D	E	D	D	D	D
Allegion Plc	-	-	-	-	-	-	D	C	B-	C
Allergan plc	B	B	A	B	B	B	B	B	B-	B
Allete Inc.	-	-	-	-	-	E	-	-	-	-
Alliance Data Systems	-	-	-	-	-	-	D	C	D	C
Alliant Energy Corporation	-	-	-	-	-	-	-	-	-	C
Allianz SE	B	A-	A	A-	A-	B	B	B	B	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Allied Electronics Corporation Ltd (Altron)	C	D	B	B	B	C	B-	C	-	D-
Allstate Insurance Company	C	C	A	B	B	B	A-	B	-	B
Alma Media Corporation	C	B	C	B	-	B	B	B	B	A-
Almirall S.A.	-	-	-	-	D	E	C	C	C	B
Alpek SAB de CV	-	-	-	-	-	-	-	D	D	D
Alpha Bank	-	-	-	-	-	-	-	C	B-	C
Alphabet, Inc.	-	-	-	B	A	A	A	A	A	A
Alps Alpine Co., Ltd.	-	-	-	-	-	-	-	-	C	C
Alps Electric Co., Ltd.	-	E	D	D	D	D	C	C	-	-
Alstom	C	B	B	B	B	-	-	B	A-	A-
Alstria Office REIT-AG	-	-	D	D	C	B	A-	A-	B	B
Altaba Inc.	-	-	D	-	-	-	-	-	-	-
AltaGas Ltd.	-	-	-	D	C	C	B	B	-	B
Altarea Cogedim	-	-	-	B	B	A-	A-	A-	-	-
Alten	-	-	D	D	E	B	B	B	A-	A-
Altran Technologies	-	-	-	-	D	D	C	-	D	C
Altria Group, Inc.	-	C	C	C	B	B	B	A-	A-	B
Alumina	-	C	D	C	C	D	D	D	D	D
Amada Holdings, Ltd.	-	-	-	-	-	-	-	C	B	B
Amadeus FiRe AG	-	-	-	-	-	-	D	D	-	-
Amadeus IT Group, S.A.	-	-	C	B	A	B	A	A-	B	B
AMAG Austria Metall AG	-	-	-	E	D	B	-	-	-	-
Ambev - Cia de Bebidas das Américas	C	C	D	C	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ambuja Cements	-	-	-	-	-	-	B	B	C	C
Amcor	-	B	B	A-	A-	B	A-	A-	B	C
Amdocs Ltd	-	-	-	-	-	C	B	C	-	D
Amer Sports	-	E	E	D	C	D	C	C	D	D
Ameren Corporation	B	B	C	B	C	C	B	C	B-	B
America Movil	-	-	-	-	-	-	-	C	D	C
American Airlines Group Inc	-	-	-	-	-	E	-	D	D	B-
American Axle & MFG Holdings Inc	-	-	-	-	-	-	-	-	-	C
American Electric Power Company, Inc.	B	C	C	D	C	C	B	B	-	B-
American Express	C	C	B	C	C	B	B	A-	B	A
American International Group, Inc. (AIG)	-	-	-	D	D	D	B	C	C	C
American Tower Corp.	C	C	-	-	-	-	-	-	-	-
American Water Works	-	-	-	-	-	D	D	D	D	B
Ameriprise Financial, Inc.	-	-	-	-	-	-	D-	C-	C	C
AmerisourceBergen Corp.	-	-	-	-	-	-	C-	C	D	B
AMG Advanced Metallurgical Group NV	-	-	D	D	E	D	C	D	-	-
Amgen, Inc.	C	E	B	B	C	C	C	C	C	C
Amkor Technology, Inc.	-	-	-	-	-	-	-	-	-	B
Amlin	C	D	D	C	D	E	C	C	-	-
AmorePacific Corporation	-	-	-	-	B	B	B	A-	C	B
AmorePacific Group	-	-	-	-	B	B	A-	-	-	-
AMP	-	C	C	B	B	B	B	A-	A-	A-
Amphenol Corporation	-	-	-	-	-	-	-	-	D	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ams AG	-	-	C	-	E	D	C	C	C	C
Amsterdam Commodities NV	-	-	-	-	-	-	-	-	-	D
ANA Holdings Inc.	-	-	-	-	-	-	B	A-	B	B
Anadarko Petroleum Corporation	C	B	D	-	C	D	C	C	D	D
Anadolu Efes Biracılık ve Malt Sanayii A.Ş.	-	-	-	-	-	-	-	-	B-	C
Analog Devices, Inc.	C	-	C	B	B	C	B	B	B	B
Anglo American	B	C	A	A	B	B	B	A-	A-	-
Anglo American Platinum	B	B	B	A-	A	A-	A	A-	A-	B
Anglo Pacific Group	-	-	-	-	-	-	C-	-	-	-
AngloGold Ashanti	C	C	C	B	C	C	B	B	B-	C
Anheuser Busch InBev	B	B	B	A	A	B	A-	B	B	A-
Anritsu Corporation	-	-	-	-	B	C	B	B	B	B
Ansaldo STS	-	B	D	B	B	C	C	C	-	-
Ansell	-	-	-	-	-	-	-	D	C	B
Anta Sports Products Ltd	-	-	-	-	-	-	-	-	-	D
Anthem Inc	C	D	C	-	D	D	C	C	C	C
Aon plc	-	-	-	C	-	-	-	D	C	-
Aoyama Trading Co., Ltd.	-	-	-	-	-	-	-	-	-	D
APA Group	-	C	D	D	D	D	B-	C	D-	-
Aperam	-	-	-	-	D	D	B	A-	B	B
APG SGA SA	-	-	-	-	-	-	-	C	B	A-
Apple Inc.	-	-	-	-	A	A	A	A	A	A
Applied Materials Inc.	B	D	B	-	D	E	C-	B	D	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Applus Services	-	-	-	-	-	-	-	C	B	B
AptarGroup	-	-	-	-	-	C	C	B	C	B-
Aptiv	-	-	-	C	C	D	C	C	B	B
Aqua America Inc.	-	-	-	-	-	-	-	-	-	B-
Aquarius Platinum	D	C	E	E	D	D	C	-	-	-
Aquila Resources	-	D	C	B	C	-	-	-	-	-
Aramark Corporation	-	-	-	-	-	-	C	C	D	-
Arbonia AG	-	-	-	-	D	D	-	-	-	-
ARC Resources Ltd.	-	-	B	B	B	C	-	C	B	B
Arca Continental, SAB de CV	-	-	-	-	-	-	-	B	C	B
Arcadis	-	-	D	B	D	B	B	B-	B	B
Arcadis Consulting (UK) Ltd	C	D	-	D	-	-	-	-	-	-
Arçelik A.Ş.	-	-	-	-	A	B	A	A	-	A-
Arcelor Mittal South Africa Ltd	B	D	D	C	D	D	C	C	-	-
ArcelorMittal	B	-	C	-	C	C	B	C	B	A-
Archer Daniels Midland	-	-	-	-	C	D	B	C	B-	B
Arista Networks	-	-	-	-	-	-	-	-	C	C
Arkema	-	-	-	-	-	C	B	A-	A-	B
ARM Holdings	C	-	E	C	C	C	B	B	B	-
Arnoldo Mondadori Editore SpA	-	-	D	C	C	C	-	-	-	-
Arrium	-	C	D	C	C	D	C	-	-	-
Arrow Electronics Inc.	-	-	-	-	-	-	-	D	D	C
Arvind Ltd.	-	-	-	-	-	-	C	C	D	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Aryzta AG	-	-	-	-	-	-	-	C	D	D
Asahi Group Holdings, Ltd.	-	C	B	-	B	A	A	A-	A	A
Asahi Kasei Corporation	-	D	C	B	B	A-	A-	A-	A-	A-
Asciano Group	-	-	-	E	C	C	-	-	-	-
Ascom Holding AG	-	-	-	-	-	-	D-	D	D	C
ASE Technology Holding Co., Ltd.	-	-	-	-	-	-	-	-	A	A
Aselsan Elektronik Sanayi ve Ticaret A.Ş.	-	-	-	-	C	B	B	B	A-	A-
Ashland Global Holdings Inc	-	-	-	-	-	E	C-	D	D	D
Ashtead Group	-	-	-	-	-	-	D-	D	D	-
Asia Cement Corp	-	-	-	-	-	C	B	B	B	B
Asian Paints	-	-	-	-	-	-	D	-	-	-
Asics Corporation	-	-	D	-	C	C	B	B	B	B
Askul	-	-	-	-	-	-	-	D	A-	A
ASM International	-	-	-	E	C	D	C	C	C	C
ASML Holding	-	-	-	-	-	-	C	D	C	C
Aspen Pharmacare Holdings Ltd.	-	E	D	C	C	C	B	B	B-	C
ASR Nederland	-	-	-	-	-	-	-	-	-	B
Assa Abloy	-	-	-	C	C	C	C	C	C	C
Assicurazioni Generali Spa	-	C	B	A	B	-	B	B	B	B
Associated British Foods	C	E	D	B	A	C	A-	B	C	-
Assore Ltd	-	-	D	-	D	C	B	B	-	-
Assurant, Inc.	-	-	-	-	-	-	D	D	B	B
Astaldi SpA	-	D	E	-	-	-	-	C	C	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Astellas Pharma Inc.	-	D	B	B	B	B	A-	B	B	B
ASTM SpA	-	-	-	-	-	-	-	-	-	B
AstraZeneca	-	-	-	-	A	-	-	-	-	-
ASUSTeK Computer Inc	-	C	D	D	C	D	B	C	C	C
ASX	-	-	-	D	D	D	C	-	-	-
AT&S Austria Technologie & Systemtechnik AG	-	-	-	D	D	E	C-	C	C	B-
AT&T Inc.	B	C	B	B	B	B	A-	A-	A-	A-
Atea ASA	C	C	B	C	B	B	B	B	C	C
Atlantia	B	C	C	-	B	C	C	C	C	B
Atlantica Yield plc	-	-	-	-	-	-	-	-	-	B
Atlas Copco	C	C	D	B	B	B	-	B	C	B
Atlas Iron	-	-	E	E	E	E	-	-	-	-
Atmos Energy Corp	-	-	-	-	-	-	-	-	-	D
Atos SE	-	C	D	A	A	A	A	A	A-	A
Atresmedia Corporación	-	-	-	D	D	C	C	C	C	C
Atrium Ljungberg AB	D	D	E	D	-	C	B	B-	B	B
ATS Automation Tooling Systems	-	-	-	-	-	E	C	-	-	-
Attacq Ltd	-	-	-	-	-	-	B	B	-	-
AU Optronics	-	B	-	-	B	B	B	A-	B	B
Auckland International Airport	-	C	D	D	B	C	B	C	B	B-
Aurizon Holdings	-	-	-	E	D	B	B	B	B	-
Aurubis AG	-	-	-	-	-	C	A-	B	B	B
Ausenco	-	D	-	-	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Australia and New Zealand Banking Group	A	B	B	A-	A-	A-	A-	B	A-	A-
Auto Trader Group	-	-	-	-	-	-	-	-	-	D
Autodesk, Inc.	B	B	A	A	A	A	A	A-	C	A-
Automatic Data Processing, Inc.	-	-	D	C	C	D	A-	A-	B	A-
Autoneum Management AG	-	-	-	D	C	D	D	C	B	B
AvalonBay Communities	-	-	-	-	D	C	B	C	B	A-
Avangrid Inc	-	-	-	-	-	-	-	A-	B	B
Avantor	-	-	-	-	-	-	-	-	-	D
Avery Dennison Corporation	C	C	C	C	C	B	B	B	D	C
Aveva Group	-	-	-	-	-	E	-	-	-	-
Avianca Holdings S.A.	-	-	-	-	-	-	-	-	-	B-
Avis Budget Group	-	-	-	-	-	-	-	-	-	C
Aviva plc	-	-	-	-	A	-	-	-	-	-
Avnet Inc.	-	-	-	-	-	C	C	B	D	C
Avon Products, Inc.	C	D	E	B	D	D	C	D	D	C
AWE	-	-	E	E	D	D	C	-	-	-
AXA Group	B	A	A	A	A-	B	B	A-	A-	A-
Axalta Coating Systems	-	-	-	-	-	-	C	C	B	B-
Axel Springer SE	-	-	-	-	E	-	D	D	D-	D
Axfood	C	C	D	C	D	-	-	-	-	-
Axiata Group Berhad	-	-	-	-	-	-	-	D	D	D
Axis Bank	-	-	-	-	-	-	C	C	C	C
Axtel	-	-	-	-	-	D	C	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ayala Corporation	-	-	-	-	-	-	C-	-	D	B
Ayala Land Inc	-	-	-	D	D	D	C	C	C	C
Azbil Corporation	-	C	C	-	C	C	B	C	C	A-
B2W Companhia Global do Varejo	-	-	-	-	D	D	D	C	C	C
B3 S.A. - Brasil, Bolsa, Balcao	-	C	-	D	C	C	A-	C	C	C
Baker Hughes, a GE Company	C	D	D	B	B	B	B	B	B	B
Bakkavör Group	-	-	-	-	-	-	-	-	-	D
Balfour Beatty	-	-	-	-	A	-	-	-	-	-
Ball Corporation	C	E	C	B	B	B	B	B	C	A-
Banca Monte dei Paschi di Siena Group	B	B	B	C	B	D	-	-	-	-
Banco BPM SpA	-	-	-	-	-	-	-	-	-	B
Banco Bradesco S/A	B	-	E	C	B	B	B	A-	B	B
Banco Comercial Português SA	B	B	C	C	B	C	A-	A-	B	B
Banco Davivienda SA	-	-	-	-	-	B	B	C	C	B
Banco de Bogota SA	-	-	-	-	-	-	-	D	-	-
Banco de Galicia y Buenos Aires S.A.	-	-	E	-	-	E	C	C	C	B-
Banco do Brasil S/A	D	E	E	-	D	D	C	D	D	D
Banco Popular Espanol S.A.	C	-	-	D	C	B	B	B	-	-
Banco Sabadell	C	C	D	D	D	D	D	D	D	C
Banco Santander	B	C	C	B	A	B	A-	B	C	C
Banco Santander Brasil	-	D	B	C	B	B	A-	A-	B	B
BanColombia SA	-	-	-	-	B	B	A-	A-	A-	B
Bandai Namco Holdings Inc.	-	-	C	C	C	D	C	D	D	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Bang & Olufsen a/s	-	-	D	D	-	-	-	-	-	-
Bangkok Bank	-	-	-	-	-	-	C	-	-	-
BANIF SA	-	-	D	D	D	-	-	-	-	-
Bank Cler AG	-	-	D	B	C	B	A	B	B	-
Bank Leumi Le Israel	-	-	-	-	-	-	C	C	C	B
Bank of America	A	A	A	A	A	A	A-	A	A	A
Bank of Communications	-	-	-	-	-	-	-	D-	D-	D-
Bank of Ireland	-	-	-	-	-	C	C	C	C	C
Bank of Montreal	A	A	A	B	B	B	B	A-	C	A-
Bank of Nova Scotia (Scotiabank)	B	D	B	-	B	B	B	C	C	B
Bank of Queensland	-	D	-	-	-	-	-	-	-	-
Bankia	-	-	-	D	A	B	A-	A	B	A-
Bankinter	-	B	B	C	B	C	B	B	B	B
Banpu Public Co Ltd	-	C	-	-	-	C	B	B-	C	C
Banque Cantonale Vaudoise	-	-	D	D	E	C	D	B	-	B
Barclays	A	B	B	A	A-	B	C	B	A-	A-
Barco NV	-	-	-	-	-	E	B	C	B	B
Barloworld	A	B	A	A	B	B	B	C	B	B
Barratt Developments plc	-	-	-	-	B	B	A-	A-	B	B
Barrick Gold Corporation	B	B	B	B	B	B	A-	B	-	B-
Barry Callebaut AG	-	-	D	C	-	E	C	D	A-	A-
Basellandschaftliche Kantonalbank	-	-	D	B	D	D	D	D	-	-
BASF SE	A	A	A	A-	B	A-	A-	A-	A	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Basil Read	-	-	-	-	D	C	B-	C	-	-
Basler Kantonalbank	-	-	-	C	C	B	A	A	B	-
Basware Oyj	-	-	-	-	-	-	C	C	C	C
Bauer AG	-	-	D	C	D	E	-	-	-	-
Bausch Health Cos. Inc.	-	-	-	-	-	-	D	D	D	D
Baxter International Inc.	C	C	C	B	C	B	A-	A-	A-	A
Bayer AG	A	A	A	A-	A	A-	A	A-	A	A
Baytex Energy Corp.	-	-	E	D	D	D	C	C	D	C
BBVA	C	B	C	D	C	C	B	C	B	A-
BCE Inc.	B	C	C	B	A-	B	A-	A-	A	A-
BE Semiconductor Industries N.V	-	-	-	-	-	-	-	C	D	C
Beach Energy	-	-	-	-	-	-	-	D	D-	D
Beazley Group	C	-	-	-	D	E	-	-	-	-
Bechtle AG	-	-	-	-	-	-	D	D-	-	-
Becton, Dickinson and Co.	C	-	D	B	B	B	B	B	C	B
Befimmo SA	-	-	-	B	B	C	A-	B	A-	C
Beiersdorf AG	-	E	D	C	D	C	B-	C	B	B
Beijer Alma	-	-	-	E	D	D	C	C	D	C
Bekaert NV	-	-	-	-	-	-	D	D	D	D
Bel Fuse Inc.	-	-	-	-	-	-	D	D	-	-
Belimo Holding AG	-	-	-	E	E	E	C	C-	D-	D
Bell Aliant Inc.	-	-	D	B	C	-	-	-	-	-
Bellway Plc	C	-	-	D	C	D	C	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Bemis Company	C	D	C	C	C	D	B-	C	C	C
Bendigo and Adelaide Bank	-	-	-	D	E	D	C	C	C	C
Benesse Holdings, Inc.	-	C	-	-	C	B	A-	A-	A	A
Berkeley Group	C	C	C	C	-	-	B	A-	C	-
Berner Kantonalbank AG BEKB	-	-	B	B	B	B	A	A	A	A
Berry Global Group, Inc	-	-	-	-	-	D	B	B	B	B
Beşiktaş Futbol Yatirimlari Sanayi Ve Ticaret A.Ş.	-	-	-	-	-	-	-	D-	-	-
Best Buy Co., Inc.	C	B	A	A	A-	A	A-	A	A	A
Bharat Forge	-	-	-	-	-	-	D	D	D	D
Bharat Petroleum Corporation	-	-	-	-	-	-	-	-	-	D
BHP	-	-	-	-	-	-	-	-	A	A-
Bic	-	B	A-	-	B	A-	A	A-	A	A-
Bic Camera Inc	-	-	-	-	-	-	-	D	D-	D-
Bidvest Group Ltd	B	C	C	B	B	C	-	-	-	-
Biffa Plc	-	-	-	-	-	-	-	-	-	C
Big Yellow Group	-	-	C	D	B	C	B	B	C	B
Bilfinger SE	-	-	-	-	-	-	D	D	D	D
Bilia AB	-	-	-	-	D	E	-	C	-	-
Billabong International	-	C	D	-	-	-	-	-	-	-
BillerudKorsnäs	-	-	-	C	B	A	A	A-	B	A-
Biocon	-	-	-	-	-	-	-	-	-	C
BioGaia AB	-	-	-	-	C	C	B	-	-	-
Biogen Inc.	B	C	B	B	C	C	B	A	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
bioMérieux	-	-	-	-	-	-	-	C	C	D
Birla Carbon	-	-	-	-	-	-	C	C	D	C
BlackBerry Limited	D	-	E	D	C	C	C	C	C	C
BlackRock	-	-	E	C	D	C	B	B	A-	A-
BMO Commercial Property Trust Ltd	-	-	-	-	-	-	-	-	-	C
BMO Global Asset Management	C	C	D	D	D	-	-	-	-	-
BMO Real Estate Investments Ltd	-	-	-	-	-	-	-	-	-	C
BMW AG	A	A	A	A	A	A	A	A	A-	A-
BNK Financial Group Inc.	-	-	-	-	-	-	D-	-	-	-
BNP Paribas	B	C	C	A	A-	A-	A-	A-	A-	A-
BNY Mellon	C	B	B	A	A	A	A	A	A	A
Boardwalk REIT	-	-	-	E	E	E	C	C	D	D-
Bobst Group	-	-	-	-	D	E	E	-	-	-
Bodycote plc	-	-	-	-	-	-	C	C	C	C
BOE Technology Group Co.,Ltd.	-	-	-	-	-	-	-	C	-	C
Boeing Company	B	B	B	A-	B	B	A-	A-	A-	B
Boliden Group	B	B	B	B	B	B	A-	A-	-	-
Bolloré SA	-	-	-	-	-	-	D	-	B	B
Bolsas Y Mercados Espanoles	-	-	-	-	E	E	-	-	-	-
Bombardier Inc.	-	-	-	B	A	-	-	-	-	-
Bonava	-	-	-	-	-	-	-	D	C	B
Bonavista Energy Corporation	-	-	-	-	D	-	-	-	D	C
Bonduelle	-	-	-	C	C	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Boral	-	D	D	D	D	D	C	C	-	-
BorgWarner	-	-	-	-	-	-	C	C	B	B
Borr Drilling Ltd	-	-	-	-	-	-	-	-	-	B
Borregaard ASA	-	-	-	-	-	D	B	B	A	A
Boryszew Maflow	-	-	-	-	-	-	-	-	D	C
Boston Scientific Corporation	-	-	-	-	-	E	-	C-	C	C
Bouygues	-	-	C	-	B	B	A	A-	A	A-
Bovis Homes Group	-	-	E	D	D	-	-	-	-	D
Boyner Büyük Mağazacılık A.Ş.	-	-	-	-	-	D	-	-	-	-
BPER Banca	-	-	-	-	-	-	D	-	-	C
bpost	-	-	-	-	A	B	B	C	B	B
Brambles	-	C	D	-	B	C	B	B	C	B
Brammer Plc	-	-	-	-	-	C	B	C	-	-
Braskem S/A	-	-	-	-	B	A-	A	A	A	A-
Bravida Holding	-	-	-	-	-	-	-	D	D	D
Brembo SpA	-	-	-	-	C	B	A-	A	A	A
Brenntag AG	-	-	-	-	-	-	-	-	C	C
BRF S.A	-	-	-	B	B	C	A-	C	D	C
Bridgestone Corporation	-	C	C	B	B	B	A-	A-	A-	A-
Brisa - Auto-Estradas de Portugal SA	B	B	C	-	-	-	-	-	-	-
Brisa Bridgestone Sabanci Lastik Sanayi ve Ticaret A.Ş.	-	-	-	-	-	-	-	-	B	A-
Bristol-Myers Squibb	B	D	B	B	B	C	A-	A-	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
British Airways	B	C	-	-	-	-	-	-	-	-
British American Tobacco	C	A	B	B	B	B	A-	A-	B	A
British Land Company	B	A-	A	A	A-	B	A	B	A-	B
Britvic	-	D	D	D	B	C	C	C	C	C
BRMALLS Participações	-	-	-	-	-	E	D	-	-	-
Broadcom Corporation	D	C	D	B	B	A-	-	-	-	-
Broadridge Financial Solutions Inc	-	-	-	-	-	-	-	C	C	C
Broadspectrum	-	D	E	D	-	-	-	-	-	-
Brookfield Asset Management Inc.	-	-	D	D	D	D	-	-	-	-
Brother Industries, Ltd.	-	D	C	-	B	C	B	C	B	B
Brown-Forman Corporation	C	B	B	A	A-	A	A-	B	C	-
BRP	-	-	-	-	-	D	C	C	C	D
BT Group	A	B	B	A	A	B	A	A	A	A
BTG	-	-	-	D	D	D	C	D	D	-
Bucher Industries AG	-	-	-	-	-	-	D-	D	D	D
Bunge	-	-	-	-	-	E	C	C	C	B
Bunzl plc	B	B	C	C	B	C	B	B	B	B-
Burberry Group	C	E	D	C	C	B	B	A-	A-	A-
Burckhardt Compression AG	-	-	-	-	-	D	C	-	-	-
Bureau Veritas	-	-	-	C	C	D	C	C	B	B
Buzzi Unicem	-	-	C	B	B	B	-	-	-	-
BWP Trust	-	D	D	-	C	D	D	D	C	D
BYD	-	-	-	-	-	-	D-	D-	D-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
C&C Group plc	-	-	A-	A-	-	C	B	B	B-	B
C.H. Robinson Worldwide, Inc.	-	-	-	-	-	-	D	D	-	C
CA Technologies	C	D	B	B	C	D	B	A-	A-	-
Cable and Wireless Worldwide	C	A	B	-	-	-	-	-	-	-
Cabot Corporation	-	-	-	-	-	-	C	C	C	B
CAE Inc.	-	-	-	-	-	-	-	D	D	C
Caesars Entertainment	-	-	-	-	A-	A-	A	A-	A-	A
Cairn Energy	-	C	D	D	C	D	C	C	B-	B-
Cairn India	-	-	-	-	-	-	C	-	-	-
CaixaBank	-	C	B	B	A	A	A	A	A-	A-
Calbee, Inc.	-	-	-	-	-	-	-	D	D	D
California Resources Corp	-	-	-	-	-	-	-	B	B	A-
Callcredit Information Group	-	-	-	-	-	E	C-	C-	-	C
Calsonic Kansei Corporation	-	-	-	-	-	D	A-	B	-	B
Cambian Group	-	-	-	-	-	E	-	-	-	-
Cameco Corporation	-	-	D	D	C	C	C	C	-	-
Canadian Imperial Bank of Commerce (CIBC)	C	C	C	D	C	D	C	C	D	B
Canadian National Railway Company	B	B	C	-	A	A-	A	A	A	A-
Canadian Natural Resources Limited	-	-	-	D	-	-	C	D	D	D
Canadian Pacific Railway	-	-	D	D	A-	B	B	B	C	B
Canadian Tire Corporation, Limited	-	-	D	D	B	A-	A-	B	C	B
Canary Wharf Group Plc	-	-	-	-	-	-	-	C	C	B
Canon Inc.	B	C	B	-	A-	A-	A	B	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Canon Marketing Japan Inc.	-	D	-	-	-	-	-	-	-	-
Cap Gemini	-	-	C	B	A	B	A-	A-	B	A
Capita Group	B	C	-	-	-	-	-	-	-	C
Capital & Counties Properties	-	-	D	C	B	B	B	A	B	B
Capital One Financial	C	D	D	-	C	D	C	C	C	C
Capital Power Corporation	-	-	D	-	C	C	C	C	D	A-
CapitalLand Limited	-	-	-	C	B	B	B	B	B	B
Capitec Bank Holdings Ltd	-	-	-	-	E	E	C	-	-	-
Cardinal Health Inc.	D	D	D	-	E	D	C	C	D	C
Cargotec Corporation	C	E	E	-	D	E	-	C	C	C
Carillion	-	-	-	A	A	-	-	-	-	-
Carl Zeiss AG	-	-	-	-	-	-	-	-	B	B
Carlsberg Breweries A/S	C	C	C	B	C	D	C	C	C	B
Carnival Corporation	C	B	B	-	C	B	B	B	D	B-
Carrefour	B	B	D	B	C	B	B	A-	A	A
Cascades Inc.	-	-	-	-	-	-	-	-	-	D
Casino Guichard-Perrachon	-	-	-	C	B	C	B	B	B	A-
Casio Computer Co., Ltd.	-	D	D	-	B	C	C	C	C	C
Castellum	-	-	D	D	-	B	A-	A-	B	A-
Catcher Technology Co Ltd	-	-	-	-	-	-	C	-	-	-
Caterpillar Inc.	-	D	-	-	-	-	-	-	-	-
Cathay Financial Holding	-	-	-	C	C	C	C	B	B	A-
Cathay Pacific Airways Limited	-	D	C	-	B	C	B	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Catlin Group Ltd	D	D	D	C	C	B	-	-	-	-
Caverion	-	-	-	-	-	D	B-	C	D	C
CBRE Group, Inc.	C	D	E	-	B	B	B	B	C	C
CCL Industries	-	-	-	-	-	D	B	C	C	B
CDW Corporation	-	-	-	-	-	-	-	D	-	-
Ceconomy AG	B	B	C	A-	A-	A-	A-	A-	-	-
Cegereal	-	-	-	-	-	-	D	C	B	B
Çelebi Hava Servisi A.Ş.	-	-	-	-	D	D	D	C	D	C
Celestica Inc.	-	-	C	C	B	B	B	B	B	B
Celgene Corporation	D	E	C	C	B	C	B	C	B	B
Cellnex Telecom SA	-	-	-	-	-	-	B	B	B	A
Celsia SA ESP	-	-	-	-	-	D	B	C	C	C
Cementos Argos SA	-	-	-	-	-	B	B	B	B	B
Cemex	-	C	C	B	B	B	A-	A-	B	A
Cenovus Energy Inc.	-	C	C	B	B	B	A-	B	-	-
Centamin plc	-	-	-	-	-	-	-	C	C	C
CenterPoint Energy, Inc.	-	-	-	E	-	-	-	-	-	-
Centerra Gold Inc.	-	-	E	D	-	E	C	D	D	D
Centrais Eletricas Brasileiras S/A (ELETROBRAS)	-	-	D	-	B	C	-	C	C	B
Centrais Eletricas de Santa Catarina SA CELESC	-	-	-	-	-	E	D	D	D	D
Central Japan Railway Company	-	-	-	-	E	E	C	D	B-	B
Centrica	B	A-	B	B	A	B	A	A-	A-	A
CENTROTEC Sustainable AG	-	-	C	D	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
CenturyLink	-	E	E	D	C	C	C	B	C	B
Cermaq Group ASA	C	C	C	B	B	C	B	B	B	B-
CEWE Stiftung & Co. KGaA	D	-	C	B	C	B	A-	A-	B	B
CEZ	-	-	-	-	-	-	-	-	D	D
CG Power and Industrial Solutions Limited	-	-	-	-	-	-	D	D	-	-
CGG SA	-	-	-	E	-	-	-	-	-	-
CGI Group Inc.	-	-	-	D	C	D	C	B-	C	C
Challenger	-	-	-	-	E	E	D	D	-	-
Chang Hwa Bank	-	-	-	-	-	-	-	-	-	B
Charles River Laboratories International Inc.	-	-	-	-	-	-	-	-	-	B
Charles Schwab Corporation	-	-	E	E	D	E	D	D	C	C
Charoen Pokphand Foods PCL	-	-	-	-	D	C	B	B	B-	C
Charter Hall Group	-	-	C	-	C	C	C	C	-	C
Charter Hall Retail REIT	-	E	-	-	-	-	-	-	-	-
Chaun-Choung Technology Corp	-	-	-	-	-	D	C-	C-	-	-
Check Point Software Technologies Ltd	-	-	-	-	-	-	-	D-	-	-
Cheil Worldwide	-	-	-	-	C	E	D	-	-	-
Chemours Co/The	-	-	-	-	-	-	-	-	-	C
Chevron Corporation	B	B	B	A-	A-	B	B	B	-	-
Chicony Electronics Co. Ltd	-	-	-	-	-	D	D	D	-	-
Chime Communications	-	-	-	-	-	E	C	-	C	C
China Agri-Industries Holdings Ltd	-	-	-	-	-	-	D	D-	-	-
China Airlines	-	-	-	-	-	C	A-	B	A-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
China Citic Bank	-	-	-	-	-	-	-	D-	D-	D
China Construction Bank	-	-	-	-	-	-	-	D	D	D
China Development Financial Holdings	-	-	-	-	-	-	D	C	B	B-
China Everbright International	-	-	-	-	-	-	-	-	-	B
China Mobile	-	-	-	-	-	B	A	A	A	A-
China Petrochemical Development Corp.	-	-	-	-	-	-	-	-	-	B
China Petroleum & Chemical Corporation	-	-	-	-	-	-	-	-	D	D
China Shenhua Energy	-	-	-	-	-	-	-	-	-	D-
China State Construction International Holdings Ltd	-	-	-	-	-	-	D	D	D	C
China Steel Corporation	-	-	C	B	B	B	B	A-	B	B
China Telecom	-	-	-	-	-	-	-	D-	D	D
China Unicom	-	-	-	-	-	-	-	-	-	D-
China Vanke	-	-	-	-	-	-	-	D	D	-
Chocoladefabriken Lindt & Sprüngli AG	-	-	-	E	E	E	D	C	C	C
Chorus	-	-	-	E	C	D	C	C	B	B-
Chow Tai Fook Jewellery Group	-	-	-	-	-	-	-	-	-	B
Chr. Hansen Holding A/S	-	D	D	D	C	D	B-	C	D	D
Christian Dior	-	-	E	E	B	C	-	-	-	-
Chubb Limited	A	B	A	A	B	B	A-	A-	B	B
Chubu Electric Power Co., Inc.	-	-	-	-	-	-	-	-	-	B
Chugai Pharmaceutical Co., Ltd.	-	-	E	-	B	D	C	C	C	B
Chunghwa Telecom	C	C	E	D	D	C	C	C	-	D
Church & Dwight Co., Inc	-	-	-	-	-	-	-	C	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Cia Energética de São Paulo S.A. - CESP	-	-	-	-	D	E	C	C-	D	-
Cia Energetica do Rio Grande Norte - COSERN	-	-	-	-	-	-	D-	-	-	-
Cia Paranaense de Energia - COPEL	-	-	E	-	D	D	B	C	C	C
Cia Saneamento de Minas Gerais - COPASA	-	-	-	-	E	D	D	D	D	C
Cia. Brasileira de Distribuicao (CBD) Grupo Pao de Acucar	-	-	-	-	D	D	C	C	D	B-
Cia. Siderurgica Nacional - CSN	C	E	D	D	-	-	-	C	D	D
CIE Automotive	-	-	-	C	-	D	C	C	C	C
Cielo SA	-	-	-	E	E	D	C-	C	C	B
Cigna	D	-	E	C	B	C	B	B	B	B
CIMIC Group	-	D	B	-	B	C	C	C	C	C
Çimsa Çimento Sanayi ve Ticaret A.Ş.	-	-	-	-	C	C	A-	B	B	B
Cincinnati Financial Corporation	D	E	E	C	C	D	C	C	C	C
CIR SpA	-	-	-	-	-	-	-	B	C	-
Circassia Pharmaceuticals	-	-	-	-	-	-	C-	-	-	-
Cisco Systems, Inc.	A	A	B	A	A	A	A	A	A	A
Citigroup Inc.	B	B	B	B	B	A	A-	A-	A-	A
Citizen Watch Co.,Ltd.	-	-	C	D	C	D	C	C	B-	B-
Citizens Financial Group Inc	-	-	-	-	-	-	-	C	C	C
City Developments Limited	-	D	D	C	B	B	C	A-	A	A
Citycon Oyj	C	C	D	-	-	B	B	B	C	B
CJ Cheiljedang	-	-	-	-	D	C	B	B	C	B
Clariant AG	-	-	C	B	B	B	B	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Clas Ohlson AB	C	D	E	D	-	C	B	B	B	B
Cleanaway Waste Management	-	-	-	C	B	D	B-	C	C	C
Clicks Group Ltd	-	B	B	B	B	B	A-	A-	A-	A-
Cloetta AB	-	-	-	-	-	-	-	D	C	C
Clorox Company	C	A	B	B	B	B	B	B	C	A-
Close Brothers Group	-	-	-	-	-	-	C	C-	C	C
CLP Holdings Limited	B	B	B	B	B	C	A-	B	B	B
CLS Holdings plc	-	-	-	-	D	E	-	-	C	B-
Club Mediterranee	-	B	-	C	B	B	B	-	-	-
CMS Energy Corporation	D	C	C	C	C	C	B	B-	B-	D
CNH Industrial NV	-	-	-	B	A	A	A	A-	A-	A-
CNOOC	-	-	-	-	-	-	-	-	-	D
CNP Assurances	B	C	D	C	B	D	B	B	C	B-
CNX Resources	-	-	-	C	D	D	C	C	-	-
Coats Group Plc	-	-	-	-	-	-	D	-	C	B
Cobham	C	C	C	B	A	B	A-	A-	B	B
Coca-Cola Amatil	-	C	C	-	-	-	-	D	-	B-
Coca-Cola Bottlers Japan Holdings Inc.	-	-	C	C	B	B	B	B	B-	B
Coca-Cola European Partners	B	C	B	A-	B	B	A	A	A	A
Coca-Cola Femsa Sab-Ser I	-	-	-	-	-	-	-	B-	C	C
Coca-Cola HBC AG	-	-	-	-	A	B	A	A	A-	A
Coca-Cola İçecek A.Ş.	-	-	-	-	B	B	A-	B	B	B
Cofinimmo SA/NV	-	-	-	C	C	C	B	C	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Cogeco Inc.	-	-	D	C	C	C	B	C	C	C
Cognizant Technology Solutions Corp.	C	C	D	C	D	C	C	C	D	-
Colbun SA	-	-	C	C	-	B	B	B	B	B
Colgate Palmolive Company	B	B	B	B	B	B	A	A	A-	A-
Colombina S.A.	-	-	-	-	-	-	-	C	C	C
Coloplast A/S	C	D	C	C	B	C	B	C	C	C
Colt Technology Services	-	-	D	D	C	D	D	-	-	-
Comcast Corporation	-	-	-	-	-	-	-	-	C	B
Comerica Incorporated	C	B	B	A	A	B	A-	A-	B	B
ComfortDelGro Corporation Limited	-	-	-	-	-	-	-	-	D-	C
Commercial International Bank	-	-	-	-	-	-	-	-	-	D
Commerzbank AG	-	C	B	A-	A	B	A-	B	B	B
Commonwealth Bank of Australia	-	A	B	A	A	B	A-	B	B	B
CommonWealth Partners	-	-	-	-	-	D	C	C	C	C
CommScope, Inc.	-	-	-	-	-	-	-	-	D	C
Communis Limited	-	-	-	-	-	C	A-	A-	B	-
Compagnie Financière Richemont SA	-	C	C	B	C	D	C	C	B	B
Compal Electronics	-	-	-	-	B	C	B	B	B-	B-
Companhia de Eletricidade do Estado da Bahia COELBA	-	-	-	-	-	-	D-	-	-	-
Companhia de Saneamento Basico do Estado de Sao Paulo - SABESP	-	-	-	D	D	-	-	-	-	-
Companhia Energetica Minas Gerais - CEMIG	-	-	B	B	B	B	A-	A-	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Compañía Española de Petróleos, S.A. (CEPSA)	-	-	-	-	-	-	-	-	B	B
Compass	C	-	D	C	B	B	A-	A-	A-	B
Computacenter Plc	-	E	E	D	-	D	D	-	D	-
Computer Sciences Corporation (CSC)	-	C	C	B	C	C	B	B	-	-
Computershare	-	-	-	E	-	D	D	D	D-	D
Conagra Brands Inc	B	C	B	B	B	C	B	B	C	B
ConocoPhillips	C	-	C	B	B	C	B	B	B	B
Consol Energy Inc.	-	-	-	-	-	-	-	-	-	D
Consolidated Edison, Inc.	A	A	B	B	B	D	-	-	-	-
Constellation Brands, Inc.	C	C	C	B	B	B	B	B	B	B
Constellation Energy Group, Inc.	-	C	-	-	-	-	-	-	-	-
Constellium	-	-	-	-	-	-	C	-	D	C
Construcciones & Auxiliar de Ferrocarriles	-	-	-	-	-	-	-	D-	-	-
Contact Energy	-	C	-	-	-	-	-	-	-	D
Continental AG	-	D	B	C	C	C	B	C	B	B
ConvaTec	-	-	-	-	-	-	-	C-	D	C
Conwert Immobilien Invest SE	-	-	-	-	E	E	-	-	-	-
Conzzeta AG-Reg	-	-	-	-	-	-	-	D-	D-	D-
Corbion	-	-	-	-	-	-	B	C	B	B
Core Laboratories N.V.	-	-	-	-	D	E	D	C	B-	C
Corio	-	-	B	B	C	-	-	-	-	-
Corning Incorporated	-	-	-	D	D	E	D	C-	B-	C
Corporación Inmobiliaria Vesta S.A.B de C.V.	-	-	-	-	-	-	-	D	D	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
COSAN S.A. Indústria e Comércio	-	-	-	-	-	-	-	-	-	C
COSCO Shipping Ports Ltd	-	-	-	-	-	-	D-	-	D-	C
Cosmax Inc	-	-	-	-	-	-	-	D-	-	-
Cosmo Energy Holdings Co., Ltd.	-	-	-	-	-	B	B	B	C	B
Costain Group	C	C	C	A	B	C	B	B	C	-
Costco Wholesale Corporation	-	-	-	-	-	-	C	C	D	D
Countryside Properties	-	-	-	-	-	-	-	C	C	C
Covanta Energy Corporation	-	-	-	-	-	-	C	C	C	C
Covivio	-	B	E	C	C	A	A-	A-	A	A-
Coway Co Ltd	-	-	A	-	A-	A	A-	A-	A-	-
CP ALL Pcl	-	-	-	-	-	-	-	-	-	B
CPFL Energia SA	-	-	-	B	C	B	A-	C	D	B
CPFL Energias Renovaveis SA	-	-	-	-	-	-	-	C	C	-
Cramo Oyj	-	-	-	-	-	-	-	D	D	C
Cranswick	C	D	D	D	D	D	-	D	D	C
Credicorp Limited	-	-	D	-	-	E	C	C	D	C
Credit Agricole	C	D	D	D	C	D	B	A-	C	C
Credit Suisse	B	C	B	B	B	A	B	B	C	B
Credito Valtellinese	-	D	D	C	C	D	C	C	-	-
Cree, Inc.	-	-	-	-	-	-	C-	B	B	B
Crescent Point Energy Corporation	-	-	D	D	D	D	C	C	B	B
Crest Nicholson PLC	-	-	-	-	B	B	B	B	C	B
CRH Plc	B	B	C	-	B	C	B	C	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Croda International	-	E	D	B	B	B	B	A-	B	B
Crown Castle International Corp	-	-	-	-	-	-	D	-	-	-
Crown Holdings	-	-	-	-	-	-	A-	A-	B	B
Crown Resorts	B	D	D	C	C	C	C	C	-	-
CSL	C	D	D	C	C	D	C	C	D	C
CSR	-	-	-	-	-	-	D-	-	-	-
CSRA	-	-	-	-	-	-	-	C	C	-
CSX Corporation	A	A	B	A	A	A	A-	A-	A-	A-
CTBC Financial Holding Co., Ltd	-	-	-	C	D	C	A-	A-	A-	B
CTCI Corp (Holdings)	-	-	-	-	-	-	-	B	B	B
CTT - Correios de Portugal SA	-	-	-	-	B	B	A-	A	A-	A-
Cummins Inc.	B	C	B	B	B	B	B	B	B	B
CVS Health	-	D	D	B	A	C	B	C	B	A
CyberAgent, Inc.	-	-	-	-	-	-	-	D-	D-	D-
Cyberdyne Inc	-	-	-	-	-	-	-	D-	-	-
CYBG Plc	-	-	-	-	-	-	-	-	-	C
Cypress Semiconductor Corporation	-	-	-	-	-	E	C	C	D	C
Cyrela Brazil Realty S.A. Empreendimentos e Participações	-	-	-	-	-	-	D-	-	-	-
D.R. Horton, Inc.	-	-	-	-	-	-	-	D-	-	-
Daelim Industrial	-	-	-	-	B	D	C	-	-	-
Daetwyler Holding AG	-	-	-	E	D	D	C	C	D	D
Daewoo E&C	-	-	-	-	B	B	A-	A-	B	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Daewoo Shipbuilding & Marine	-	-	-	-	C	-	D	-	-	-
Dai Nippon Printing Co., Ltd.	-	C	B	B	A	A	A-	B	A-	A-
Daicel Corporation	-	-	-	-	D	D	C	C	D	B
Daifuku Co., Ltd.	-	-	-	-	-	-	-	A-	A-	A-
Daihatsu Motor Co., Ltd.	-	-	-	-	-	-	B	B	D	A-
Dai-ichi Life Holdings, Inc.	-	-	-	-	B	B	A	B	B	B
Daiichi Sankyo Co., Ltd.	-	-	D	A	A-	B	A-	A-	B	B
Daikin Industries, Ltd.	-	B	C	B	A	B	B	A-	B	B
Daimler AG	B	B	A-	A	A	A-	A	A-	A-	A-
Dairy Crest Group	C	C	D	C	B	C	B	B	B	-
Daito Trust Construction Co., Ltd.	-	C	C	-	C	B	A	A-	B	A
Daiwa House Industry Co., Ltd.	-	B	B	B	A	B	A-	A-	A	A
Daiwa Securities Group Inc.	-	C	D	B	C	C	B	C	C	C
Dalata Hotel Group	-	-	-	-	-	-	-	-	-	B-
Dalmia Bharat Ltd	-	-	-	-	-	-	B	B	B	B
Dampskibsselskabet NORDEN A/S	B	B	B	B	A	B	B	B	C	C
Dana	-	-	-	-	-	-	-	-	D	C
Danaher Corporation	-	-	-	-	-	-	D-	D-	D-	D-
Dangote Cement PLC	-	-	-	-	-	-	-	-	-	C
Danieli & C Officine Meccaniche S.p.A.	-	-	-	-	-	C	B	B	B	B
Danone	B	A-	B	B	A	B	B	A-	A	A
Danske Bank A/S	B	E	C	B	B	B	B	B	C	C
Darden Restaurants, Inc.	C	C	C	C	B	B	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Darfon Electronics Corp	-	-	-	-	-	-	-	C	B	B
Darling Ingredients Inc	-	-	-	-	-	-	-	-	-	C
Darty plc	-	-	-	-	-	D	B-	-	-	-
Dassault Systemes	-	C	D	B	B	C	C	-	-	-
Datatec	-	-	-	-	-	-	C	C	C	B
David Jones	-	C	B	A	B	-	-	-	-	-
DaVita Inc.	-	-	-	-	-	-	-	C	-	B
DB Insurance	-	-	-	-	D	D	B	-	-	-
DBS Group Holdings	-	-	-	-	-	-	D	C	B	B
DCC PLC	-	-	C	-	C	E	C	C	C	C
De La Rue	-	-	D	E	D	C	C	C	C	B-
Dean Foods Company	A	B	B	B	C	B-	C	-	-	-
Deere & Company	B	C	C	C	C	C	C	C	C	C
Delhaize Group	-	D	D	B	B	B	B	-	-	-
Dell Inc.	-	-	-	-	-	-	A-	-	-	-
Dell Technologies	-	-	-	-	-	-	-	B	C	B
Delta Air Lines	-	B	-	-	B	C	B	C	B	A-
Delta Electronics, Inc.	-	D	B	B	A	B	A-	A-	B	A-
Delta Electronics (Thailand) plc	-	-	-	-	-	-	B	B	B	B
Delta Lloyd NV	-	-	-	-	-	-	D	D	-	-
Denka Company Limited	-	-	-	-	-	B	B	A-	B	A-
Denso Corporation	-	-	D	-	C	D	B	B	B-	B-
Dentsply Sirona Inc.	-	-	-	-	E	D	C	C	D	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Dentsu Aegis Network	-	C	-	C	C	B	B	B	B	-
Dentsu Inc.	-	C	B	-	B	C	A-	B	C	A-
Derichebourg Multiservices	-	-	-	-	-	-	C	D	-	-
Derwent London	C	C	C	C	C	C	B	B	B	B
Detour Gold Corporation	-	-	-	-	-	-	C	D	C	B-
Deutsche Bahn AG	-	-	-	-	-	A	A-	A	A	A
Deutsche Bank AG	B	B	A	A	B	B	B	-	C	C
Deutsche Beteiligungs AG	-	-	-	-	E	E	C	C	D	D
Deutsche Börse AG	C	B	B	B	B	C	B	A-	C	B
Deutsche EuroShop AG	-	-	-	-	-	-	D	D	D	D
Deutsche Lufthansa AG	-	B	C	B	B	B	B	A-	B	B
Deutsche Post DHL Group	A	A-	B	B	B	A	A-	A-	A-	B
Deutsche Postbank AG	-	D	D	C	D	C	C	C	D	-
Deutsche Telekom AG	A	C	C	B	B	A-	A	A	A	A
Deutz AG	-	-	-	-	-	-	C-	-	-	D
Devon Energy Corporation	C	D	C	B	B	C	B	C	B	B
Dexus Property Group	-	B	B	-	A	A	A	A-	A-	A
DGB Financial Group	-	-	C	-	C	B	A-	A-	A-	B
DIA	-	-	-	-	-	C	A-	A-	A-	B
Diageo Plc	B	A-	A	A	A	A	A	A	A	A-
Dialog Semiconductor plc	-	-	-	-	-	D	D	D	D-	-
Diasorin SpA	-	-	-	-	-	D	C	C	-	-
DIC Asset AG	-	-	D	D	-	-	D	-	D	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
DIC Corporation	-	C	D	-	B	A-	A-	A-	B	B
Diebold Nixdorf	-	-	-	-	-	E	C	C	C	C
DiGi.Com Berhad	-	B	E	B	-	-	-	-	-	-
Digital Realty Trust Inc	-	-	-	-	-	-	-	-	-	A-
Dignity	-	E	-	D	E	C	B	C	B	B
Dillard's Inc.	-	-	-	-	-	-	-	D	D	D
Dimension Data Holdings	-	-	B	-	-	-	-	-	-	-
Direct Line Insurance Group	-	-	-	-	-	C	C	B	B-	B
DirecTV	-	-	B	-	-	-	-	-	-	-
DISCO Corporation	-	-	C	B	B	B	C	C	C	B
Discovery Holdings Ltd	C	D	C	B	C	C	B	C	C	C
Distell Group Holdings	-	-	-	-	-	-	-	-	B	B
Divi's Laboratories	-	-	-	-	-	-	-	-	-	D
Dixons Carphone	-	-	-	-	-	-	C	C	B	B
DKSH Holding AG	-	-	-	-	-	-	D	D	D	C
DNA Plc	-	-	-	-	-	-	-	B	B	B
DNB ASA	B	D	E	B	B	B	A-	A	A	A
DNO International ASA	-	D	D	D	D	E	C	C	D	B
DOF ASA	-	C	E	D	C	B	B	B	C	B
Dometic	-	-	-	-	-	-	C-	D	D-	D-
Dominion Energy	C	D	C	-	-	-	-	-	B	A-
Domino Printing Sciences	-	E	E	C	B	C	-	-	-	-
Domino's Pizza Group plc	-	E	E	E	D	C	C	C	C	B-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Domtar Corporation	-	-	-	E	E	E	D	D	C	C
Don Quijote Holdings Co., Ltd.	-	-	-	-	-	-	-	-	-	C
Donlim	-	-	-	-	-	-	-	C-	-	C
Doosan Corp	-	-	-	-	-	E	C	-	-	-
Doosan Heavy Industries & Construction	-	-	-	-	A	C	A-	A-	D	C
Doosan Infracore	-	-	D	-	C	-	-	-	-	-
dormakaba Holding AG	-	-	-	-	-	-	B-	-	B	B
Dover Corporation	-	E	D	C	C	C	B	B	B	B
Dowa Holdings Co., Ltd.	-	D	C	-	C	-	-	D	D	C
Downer EDI	-	D	C	B	C	B	B	C	C	B
DP World	-	-	-	-	-	A-	A-	A-	A	A-
Dr Pepper Snapple Group Inc	-	E	D	B	B	B	A-	B	-	-
Dr. Reddy's Laboratories	-	-	-	-	-	-	C	A-	B	C
Drägerwerk AG	-	-	E	D	E	D	-	-	-	-
Drax Group	-	D	C	C	B	-	-	-	-	C
DS Smith Plc	-	D	D	C	C	C	B	B	B	-
DSV A/S	-	-	-	E	E	D	D	D	D	D
DTE Energy Company	C	D	D	C	-	C	B-	C	D	B
Duet Group	-	-	-	-	-	-	D-	-	-	-
Duke Energy Corporation	C	C	C	C	C	C	C	C	D	B
Dunkin' Brands Group	-	-	-	-	-	E	C	C	D	B
Duran Doğan Basım ve Ambalaj A.Ş.	-	-	-	-	-	-	C	C	B	B
Duratex S/A	-	-	-	-	B	C	A-	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Dürr Aktiengesellschaft	-	-	-	-	-	E	-	D	D	D
DXC Technology	-	-	-	-	-	-	-	-	-	C
E.I. du Pont de Nemours and Company	B	B	B	A	B	B	A-	A-	C	-
E.ON SE	A	B	C	B	B	A	A-	A-	B	B
E.Sun Financial Holding Co	-	-	-	-	-	C	C	C	B	B
East Japan Railway Company	-	-	-	C	D	B	A-	A-	B	B
Eastman Chemical Company	-	-	-	-	-	C	B	C	B-	B-
easyJet	-	-	-	-	-	-	D	-	-	-
Eaton Corporation	B	B	A	A-	A-	B	A-	A-	B	A-
Ebara Corporation	-	D	C	-	B	C	C	C	C	B
eBay Inc.	C	C	D	D	D	D	C	B	B	A-
Ebos Group	-	-	-	-	-	-	D	D	-	-
Ebro Foods S.A.	-	-	-	-	E	-	D	D	D	D
ECA	-	-	-	-	-	-	D	-	-	-
Eclat Textile Co Ltd	-	-	-	-	-	-	D	D	C	C
Ecocem	-	-	-	-	-	-	-	-	D	-
Ecolab Inc.	B	A	B	A	B	B	A-	A-	A-	A-
Econocom	-	-	-	-	E	-	-	-	-	-
Ecopetrol Sa	-	-	-	-	C	D	D	-	-	-
Ecorodovias Infraestrutura e Logística S.A	-	-	-	-	C	B	A	A-	A-	B
Ecova, Inc.	-	-	-	-	-	B	B	C	-	-
Edenred Brasil	-	-	-	-	-	D	C	C	-	-
Edenred SA	-	-	-	-	E	D	-	-	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
EDF	B	D	B	B	B	A-	A	A-	A	A
Edison SpA	-	C	D	-	-	-	-	-	-	-
EDP - Energias de Portugal S.A.	B	A-	B	-	B	A	A	A-	A-	A-
EDP - Energias do Brasil S.A.	-	-	-	-	C	B	B	B	C	C
Edwards Lifesciences Corp	-	-	-	-	-	D	C	C	D	C
Eiffage	-	-	-	-	D	D	D	D	C	B
Eisai Co., Ltd.	-	-	-	-	-	-	A-	B	B	A
Ekornes ASA	-	C	B	B	E	C	B	B	-	-
Eldorado Gold Corporation	-	-	E	E	E	E	C	C	D	C
Electric Power Development Co.,Ltd (J-POWER)	-	-	-	-	-	-	-	C	C	B-
Electrocomponents	-	B	B	B	B	B	A-	A-	B	B
Electrolux	B	C	B	A	A-	B	A	A	A	A-
Elekta	D	D	B	B	A	B	-	D-	D	C
Elementis plc	-	-	-	-	B	B	-	C	B	C
Eletropaulo Metropolitana Eletricidade de São Paulo S/A	-	-	-	-	D	D	C	C	-	-
Eli Lilly & Co.	C	C	C	B	B	C	A-	B	A-	B
Elia System Operator	-	-	-	-	-	-	-	C	B-	B-
Elisa Oyj	-	C	B	-	A	B	B	A	A-	A-
Elpida Memory, Inc.	-	D	D	-	-	-	-	-	-	-
EringKlinger AG	-	-	C	C	D	D	C	C	-	D
Eltek AS	-	-	-	-	-	D	C	C	-	-
ELTEL	-	-	-	-	-	-	D	D	-	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Emaar Properties	-	-	-	-	-	-	-	D	-	-
Embraer S.A.	-	-	C	-	-	-	-	C	-	-
EMC Corporation	B	B	B	A	A-	A	A	-	-	-
Emeco Holdings	-	E	E	E	-	-	-	-	-	-
Emera Inc.	-	-	B	B	C	D	B	B	B	B
Emerson Electric Co.	-	-	-	-	-	-	D-	D	D	C
Emira Property Fund	-	D	D	C	C	C	A-	B	B	B
Emmi AG	-	-	-	-	-	-	-	B	-	B-
Empire Company Limited	-	-	C	D	-	-	D	C	D	C
Empresa de Energia de Bogota S.A. E.S.P.	-	-	-	-	-	C	-	C	D	D
Empresas CMPC	-	-	-	-	D	E	D	C	C	B
Empresas COPEC S.A.	-	-	-	-	-	-	-	D	D	C
Ems-Chemie Holding AG	-	-	-	C	C	C	-	-	-	-
Enaex	-	-	-	-	-	B	-	A-	B	-
ENAGAS	-	B	B	B	B	B	A	A-	B	A
Enauta Participações S/A	-	-	-	-	-	-	-	-	D	C
Enbridge Inc.	B	C	C	C	C	B	B	C	C	-
EnBW Energie Baden-Württemberg AG	-	-	C	C	A	B	B	A-	B	B
Endesa	B	A-	C	B	A	A-	B	A-	-	A-
Eneco Groep	-	-	-	-	-	-	-	C	B	B
Enel Distribuição São Paulo	-	-	-	-	-	-	-	-	D	B
Enel SpA	-	A	B	B	B	B	A	A	A-	A
ENEOS Holdings, Inc.	-	-	-	-	-	-	-	-	D	-

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Table 7 – continued from previous page

Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Energa SA	-	-	-	-	-	-	-	D	D	D
Enerplus Corporation	-	-	C	C	C	D	C	C	C	C
Ene-Vision Corporation	-	-	-	-	-	-	-	-	-	C
Engie	B	B	B	B	A-	A-	A	A	A	A
Engie Insight	-	-	-	-	-	-	-	-	-	B
Eni SpA	A	B	A	B	B	B	A	A-	A-	A-
Enka İnşaat ve Sanayi A.Ş.	-	-	-	-	-	-	-	-	B-	B
Entergy Corporation	B	B	B	A	A	A	-	-	-	-
Entra Asa	-	-	-	-	-	B	B	A	B	-
EOG Resources, Inc.	-	-	-	-	-	-	D	D-	D	D
EOH Holdings	-	-	-	-	-	-	C-	-	-	-
Equinix, Inc.	-	-	-	-	-	-	B	A-	C	B
Equinor	-	E	C	B	C	B	A-	A-	-	B
Eramet	-	-	-	-	-	-	-	-	-	D
Ercros	-	-	D	D	D	D	C	-	-	-
ERG S.p.A	-	-	-	-	-	-	B	A-	B	B
Ericsson	B	B	C	B	A	B	B	B	B	C
Erste Group Bank AG	-	-	D	D	C	D	-	-	-	-
Esprinet SpA	-	-	-	-	-	-	D	-	-	-
Essar Oil	-	-	-	-	A	-	A-	A-	-	-
Essar Steel Limited	-	-	-	-	-	-	-	D	-	-
Essentra	-	D	E	C	E	E	D	D	D	C
Essilor International	D	D	-	-	D	E	B	A-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
EssilorLuxottica	-	-	-	-	-	-	-	-	A-	-
Essity	-	-	-	-	-	-	-	-	-	A-
Estee Lauder Companies Inc.	C	C	C	A	A-	B	B	A-	B	A-
Etsy, Inc.	-	-	-	-	-	-	-	-	-	A-
Eurasian Natural Resources Corporation	-	-	C	D	-	-	-	-	-	-
Eurazeo	-	-	-	-	-	-	C	C	C	B
Eurobank Ergasias SA	-	-	-	-	-	-	D	D	-	-
Eurocash S.A.	-	-	-	-	-	-	-	-	-	D
Euromoney Institutional Investor PLC	C	-	-	-	-	E	D	C	D	D
Euronav N.V.	-	-	-	-	-	-	D	-	-	-
Europcar Mobility Group	-	-	-	-	-	-	-	C	C	B
Europris	-	-	-	-	-	-	A-	B	C	B
Euskaltel SA	-	-	-	-	-	-	C	C	C	B-
Eva Airways Corp	-	-	-	-	-	-	-	C	B-	B
Eversource Energy	B	-	C	B	C	C	B	B	C	B-
EVN AG	-	-	D	D	D	C	C	C	D	C
Evonik Industries AG	-	-	-	-	B	B	A-	A-	B	B
Evrz Highveld Steel And Vanadium Limited	-	D	-	-	-	-	-	-	-	-
Evry ASA	-	-	-	-	-	-	-	A-	-	A
EXEDY Corporation	-	-	-	-	-	-	C	C	B-	B-
Exelon Corporation	A	C	A	A	A-	B	A-	B	A-	B
Expedia Group	-	E	E	E	E	E	D	D	D	C
Expeditors International of Washington	-	D	D	C	C	C	C	C	D	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Experian Group	B	B	D	B	B	C	B	B	B	C
Express Scripts Holding Company	C	E	-	-	D	D	C	C	C	-
Exxaro Resources Ltd	B	A-	B	B	B	B	B	B	B	B
Exxon Mobil Corporation	C	B	C	B	C	C	C	C	-	-
Ezaki Glico Co., Ltd.	-	-	-	-	-	-	D	-	-	-
F5 Networks, Inc.	-	-	-	-	E	-	-	-	D	D
Fabege	-	-	-	-	-	D	-	-	-	-
Fairfax Media	-	-	C	-	-	-	-	-	-	-
FamilyMart UNY Holdings Co., Ltd.	-	-	-	-	-	-	-	-	-	B
Fanuc Corporation	-	-	-	-	-	-	D	D	D	B-
Far Eastern New Century Corporation	-	-	-	D	-	D	B	B	B	B
Far EasTone Telecommunications	-	-	-	-	-	D	B	C	C	C
Farmer Brothers	-	-	-	-	-	D	A-	A	A-	A-
Fast Retailing Co., Ltd.	-	-	-	-	-	-	B	C	B	A-
Faurecia	-	-	-	-	-	D	C	B	C	A-
FBD Holdings Plc	-	-	-	-	E	E	C	C	B	B
Federal Realty Investment Trust	-	-	-	-	-	-	-	-	-	C
FedEx Corporation	B	D	D	B	B	B	C	B	B	A-
Feintool Group	-	-	-	-	-	-	D	D	-	-
Femsa - Fomento Economico Mexicano	-	-	-	C	-	-	B	B-	-	-
Feng Tay Enterprises Co Ltd	-	-	-	-	-	-	C	-	-	-
Fenix Outdoor International AG	-	-	-	-	-	E	-	-	-	-
Ferguson plc	C	B	C	B	B	C	B	A-	C	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Ferrari	-	-	-	-	-	-	-	-	-	D
Ferrovial	A	A	A	A	A	A	A	A	A	A
Fiat Chrysler Automobiles NV	B	A	A	-	A	A	A	A-	A-	A-
Fibra Uno Administracion SA de CV	-	-	-	-	-	-	-	-	D	C
Fibria Celulose S/A	-	E	-	-	-	-	-	-	-	-
Fifth Third Bancorp	C	D	D	D	C	C	C	C	C	A-
FIH Mobile Limited	-	-	-	-	C	-	-	-	-	-
Fincantieri	-	-	-	-	-	-	C-	C-	D	B
Fingerprint Cards	-	-	-	-	-	-	C-	C	D	D
Finnair	B	B	B	B	A	B	A-	B	D	B
Finning International Inc.	-	-	-	-	-	E	-	D	D	D
First Abu Dhabi Bank PJSC	-	-	-	-	-	-	-	-	-	B
First American Financial Corporation	-	-	-	-	-	-	-	-	B-	C
First Capital Realty Inc.	-	-	D	D	C	D	C	-	C	C
First Financial Holding Co	-	-	-	-	-	D	C	B	A	A-
First Gen Corporation	-	-	-	-	-	-	C	C	D	D
First Pacific	-	-	-	-	-	-	-	-	-	D
First Quantum Minerals Limited	-	-	E	D	C	C	B-	C	B-	C
First Solar Inc	-	C	C	C	C	B	B	B	B	A-
FirstEnergy Corporation	-	-	-	-	-	-	D	C	B-	B-
FirstGroup Plc	B	C	D	B	B	C	B	C	B	C
Firststrand Limited	B	B	A	A	A	A-	A-	A-	A-	A-
Fiserv, Inc.	-	-	-	-	-	-	D-	-	-	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fisher & Paykel Healthcare Corporation	-	-	-	-	-	D	C	B	B	B
Fiskars Corporation	-	-	-	-	-	-	C	C	C	A-
Fletcher Building	-	C	C	C	C	D	C	D	D	C
Fleury S.A.	-	-	-	-	-	D	C	C	D	C
Flex Ltd.	-	-	-	-	-	-	-	-	B	A-
FLSmidth & Co. A/S	C	E	D	D	D	E	D	D	D	D
Flughafen München GmbH	-	-	-	-	-	B	B	A-	A-	A-
Fluor Corporation	-	-	-	-	E	E	D	D	D	D
FMC Corp	-	-	-	-	-	-	A-	B	C	B
Fomento de Construcciones y Contratas	-	-	-	C	B	-	C	C	C	-
Fonterra Co-operative Group	-	-	-	-	-	-	B	C	B	B
Ford Motor Company	B	-	C	C	D	B	A-	A-	A-	A
Ford Otomotiv Sanayi A.Ş.	-	-	-	-	-	-	D	B	C	B
Forest Laboratories, Inc.	-	-	-	E	-	-	-	-	-	-
ForFarmers NV	-	-	-	-	-	-	-	-	D-	D-
Formosa Chemicals & Fibre Corporation	-	-	-	-	-	-	-	C	A-	B
Formosa Petrochemical	-	-	-	-	-	-	-	C	B	A-
Formosa Plastics Corp	-	-	-	-	-	-	-	C	-	A-
Formosa Taffeta Co.	-	-	-	-	-	-	-	C	B	A-
Fortescue Metals Group	-	C	C	D	C	C	B	C	-	-
Fortress REIT Ltd	-	-	-	-	-	-	-	-	-	C-
Fortum Oyj	B	B	B	A-	B	A-	A-	A-	B	B
Foschini Group Ltd	-	E	-	-	D	E	B	C	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fossil, Inc.	-	-	-	-	-	-	-	-	-	C
Foster Electric Company, Limited	-	-	-	-	-	-	-	-	-	B-
FP Corporation	-	B	C	-	B	D	C	C	C	B
Franco-Nevada Corporation	-	-	-	-	-	-	D	D	D-	D
Franklin Resources, Inc.	D	D	C	C	C	C	C	C	B-	B
Fraport AG	-	-	B	B	B	D	C	C	C	C
Fred. Olsen Energy ASA	-	-	-	D	C	D	C	-	-	-
Freenet AG	-	-	-	-	-	-	-	-	-	C
Freeport-McMoRan Inc.	-	C	C	C	C	C	C	C	C	-
Freightways	-	-	-	-	-	-	D	D-	-	-
Fresenius Medical Care AG & Co. KGaA	-	D	E	D	D	C	B	C	C	C
Fresenius SE & Co. KGaA	-	-	-	-	-	-	D-	D-	C	C
Fresnillo plc	C	D	E	D	C	C	B	C	D	C
Frontera Energy Corp	-	-	-	-	-	-	B-	-	-	D
Frontline Ltd	C	C	C	-	-	D	C	B	C	B-
Fubon Financial Holdings	-	-	-	-	B	B	B	C	C	B
Fuji Electric Co., Ltd.	-	B	B	B	B	B	A-	A-	B	A
Fuji Media Holdings, Inc.	-	C	C	B	D	D	-	-	-	-
Fuji Oil Holdings Inc.	-	-	-	-	-	-	D	B	B	A-
Fuji Xerox Co., Ltd.	-	-	C	-	-	C	B	C	-	-
Fujifilm Holdings Corporation	-	E	C	-	B	B	A-	A-	B	A
Fujikura Ltd.	-	-	D	-	C	C	C	C	B	A-
Fujimori Kogyo Co. Ltd.	-	-	-	-	-	E	D	D	-	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fujitsu General Limited	-	-	-	-	-	-	-	-	-	C
Fujitsu Limited	-	B	A	A	A	B	B	A	A	A
Fukuoka Financial Group, Inc.	-	-	-	-	-	C	D	-	-	-
Furukawa Electric Co., Ltd.	-	D	D	-	D	C	B	C	B-	B
Fuyo General Lease Co Ltd	-	-	-	-	-	-	D	D	D	C
G4S Plc	B	-	C	C	B	B	B	C	C	B
Gail	-	-	-	-	-	-	B	C	D	D
Galenica	-	-	-	-	-	-	-	-	C	C
Galliford Try Plc	C	D	D	B	B	B	B	C	C	-
Galp Energia SA	-	-	B	B	B	A	A	A	A-	B
GameStop Corp.	-	-	-	-	-	-	-	-	C	C
Gap Inc.	C	B	B	B	B	D	A	A-	B	A-
Gartner, Inc.	-	-	-	-	-	-	D	-	-	-
Gategroup Holding AG	-	-	-	-	-	-	C	-	-	-
Gaztransport Et Technigaz	-	-	-	-	-	-	-	-	-	D
GEA Group AG	-	-	D	D	-	E	C	C	B-	A-
Geberit AG	B	D	C	C	B	B	B	C	C	C
Gecina	-	-	B	A	B	C	B	A-	-	A
Gemalto	-	D	C	C	C	D	-	C	C	C
General Electric Company	B	C	C	C	D	C	B	C	C	C
General Mills Inc.	C	C	C	B	B	C	A	A-	A	A
General Motors Company	-	-	B	A-	A	A-	A	A-	A-	A-
Generali Deutschland Holding AG	-	-	-	-	A	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Genworth Financial, Inc.	D	E	E	D	E	D	C	C	D	B
Genzyme Corporation	C	B	-	-	-	-	-	-	-	-
Georg Fischer	-	-	C	B	B	B	B	B	C	B
George Weston Limited	-	-	E	-	D	D	C	C	C	C
Gerresheimer AG	-	-	D	C	C	B	A-	B	B	B
Gestamp	-	-	-	-	-	-	-	C	-	B
Getinge AB	C	C	C	D	C	D	C	B-	C-	-
Getlink	-	-	-	-	-	-	-	-	C	C
GFI Informatique	-	-	-	-	-	-	D	-	-	-
GGP	-	-	-	-	-	D	-	C	-	-
GHCL Limited	-	-	-	-	-	-	-	-	-	C
Gildan Activewear Inc.	-	-	D	C	D	D	C	C	B	A-
Gilead Sciences, Inc.	-	B	B	-	-	-	-	-	-	B
Givaudan SA	C	D	C	A	B	A	A-	A	A-	A
Gjensidige Forsikring ASA	-	-	C	D	D	C	D	D	D	C
GKN	C	E	C	D	-	-	-	-	-	-
Glanbia PLC	-	-	-	-	-	-	-	-	-	D
GlaxoSmithKline	B	A	B	A	B	B	A	A-	B	B
Glencore plc	-	-	E	C	B	C	B	B	-	-
Global Brands Group	-	-	-	-	-	-	C	C	D	C
Global Power Synergy Public Company Limited	-	-	-	-	-	-	-	C	C	B
Globe Telecom Inc	-	-	-	-	-	-	C	-	-	D
Glory Ltd.	-	-	-	-	-	B	B	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Go-Ahead Group	-	-	C	B	B	C	B	C	B	B
Godrej Consumer Products	-	-	-	-	-	-	A-	A-	C	B
Godrej Industries	-	-	-	-	-	-	A-	B	C	B
Gold Fields Limited	A	A	A	A-	B	A-	A	A-	A-	-
Goldcorp Inc.	-	D	C	C	D	C	C	C	B	-
Golden Agri-Resources	-	-	-	-	-	-	D	D	D	D
Golden Ocean Group Limited	-	-	-	D	C	-	B	B	C	B-
Goldman Sachs Group Inc.	B	B	B	A	A	A-	A	A	A	A-
Goodman Group	-	E	D	B	B	C	C	-	-	-
Goodman Property Trust	-	-	D	D	C	D	B-	C	B-	B-
Goodyear Tire & Rubber Company	C	C	C	B	C	B	B	C	C	B
GPT Group	-	C	B	B	B	D	C	C	D	-
Grainger plc	B	D	D	C	C	C	B	B	B	B
Gran Tierra Energy Inc.	-	-	-	-	-	-	-	D-	D	D
Grandvision NV	-	-	-	-	-	-	-	C-	C	B
Graphic Packaging	-	-	-	-	-	-	-	C	C	B
Great Portland Estates	B	A	B	C	B	C	B	B	B	B
Great-West Lifeco Inc.	-	-	-	B	B	B	A	A-	A-	A-
Greencoat UK Wind	-	-	-	-	E	E	-	-	-	-
Greencore Group PLC	-	-	-	-	C	D	C	C	C	C
Greenyard	-	-	-	-	-	-	-	D	-	-
Greggs	-	C	C	B	B	C	C	B	C	C
Greif Inc	-	-	-	-	B	B	A-	B	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Grieg Seafood	-	-	-	-	-	-	-	-	-	A
GRIFOLS	-	E	C	B	B	B	B	B	B	B
Grindrod Ltd	C	E	B	C	D	C	B-	C	B	C
Grontmij NV	-	-	D	D	D	D	-	-	-	-
Groupe Eurotunnel	-	-	-	C	C	D	D	C	-	-
Groupe Fnac-Darty	-	-	-	-	-	E	D	D	D	B
Groupe PSA	B	B	B	A-	A-	A-	A	A-	A	Ã
Groupe SEB	-	-	-	C	C	C	C	A-	C	B
Groupe Steria	-	A-	A-	A	A	-	-	-	-	-
Growthpoint Properties	-	C	B	A	B	C	A-	B	B	B
Growthpoint Properties Australia	-	-	-	-	-	-	C	B	B	B
Grupo ACS (Actividades de Construcción y Servicios)	-	-	-	-	-	-	-	-	D	-
Grupo Bimbo, S.A.B. de C.V.	-	-	-	E	D	D	C	B	B	B
Grupo BTG Pactual	-	-	-	-	-	-	-	C	B	B-
Grupo CCR	-	-	-	D	B	B	A-	A-	A	Ã
Grupo de Inversiones Suramericana SA	-	-	-	-	D	B	B	B	C	B-
Grupo Ezentis	-	-	-	-	-	-	-	C	D	C
Grupo Financiero Banorte SAB de CV	-	-	C	B	B	A	A-	A-	C	B
Grupo Logista	-	-	-	-	-	B	A	A	A	A
Grupo Nutresa S.A.	-	-	-	-	C	-	C	C	C	B-
Grupo Televisa S.A.	-	-	-	-	-	E	C	C-	C	C
GS Engineering & Construction	-	-	C	-	C	C	A-	-	D	B
GS Yuasa Corporation	-	-	-	D	D	D	C	C	B-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Guerbet	-	-	-	-	-	-	-	-	-	B
Guess ?, Inc.	-	-	-	-	-	-	-	-	-	A-
Gujarat Fluorochemicals	-	-	-	-	-	-	-	-	-	D-
Gunnebo	C	C	-	-	-	-	-	-	-	-
H&M Hennes & Mauritz AB	C	D	D	A	A	B	A-	A-	A-	A
H&R AG	-	-	D	D	-	-	-	-	-	-
H&R Block Inc	-	-	-	-	-	-	-	-	D-	-
H&R Group	-	-	-	-	-	-	-	-	-	D
H&R Real Estate Investment Trust	-	-	-	-	-	-	-	C-	D	D
H2O Retailing Corporation	-	-	-	-	-	-	-	-	-	D-
Haier Electronics Group Co Ltd	-	-	-	-	-	-	-	-	-	D-
Hakuhodo DY Holdings Incorporated	-	-	-	-	-	-	-	B	B	B
Halliburton Company	C	E	D	D	D	C	B	C	D	C
Halma	-	-	E	D	C	C	C	C	C	B
Hamamatsu Photonics K.K.	-	-	-	-	-	-	B	B	B-	B
Hamburger Hafen und Logistik AG	-	-	E	D	D	D	D	D	D	D
Hana Financial Group	-	-	-	-	-	-	A-	A-	B	A-
Hanesbrands Inc.	-	-	-	-	-	D	B	C	A-	A-
Hang Lung Properties	-	-	-	-	-	-	-	-	-	C
Hang Seng Bank	B	D	-	-	-	D	D	D	D-	D
Hanjin Shipping Co Ltd	-	-	C	-	C	-	-	-	-	-
Hankook Tire & Technology Co., Ltd.	-	-	C	-	B	B	A-	A-	A-	A-
Hankyu Hanshin Holdings, Inc.	-	-	-	-	-	-	-	-	-	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hannon Armstrong Sustainable Infrastructure Capital, Inc	-	-	-	-	-	-	-	-	C	C
Hannover Rück SE	-	D	C	C	C	C	B	B	C	C
Hanon Systems	-	-	-	-	-	-	-	D	D	-
Hansae Co., Ltd	-	-	-	-	-	-	D	-	-	C
hanseWasser Bremen GmbH	-	-	-	-	-	D	B-	-	-	-
Hansol Paper Co	-	-	-	-	-	B	B	C	C	-
Hanwha Chemical Corp	-	-	C	B	B	-	-	-	-	-
Hanwha Corp.	-	-	-	-	C	-	C	-	-	-
Hanwha Group	-	-	-	-	-	D	C	-	-	-
Hanwha Q CELLS GmbH	-	-	D	-	-	-	-	-	-	-
Hanwha Techwin	-	-	B	-	B	-	-	-	-	-
Hargreaves Lansdown	-	-	-	-	-	-	-	-	-	D
Harman International Industries Inc	-	-	-	D	C	D	B	C	-	-
Harmony Gold Mining Co Ltd	B	B	B	A	A	A	A	A	A-	B
Hasbro, Inc.	-	D	B	B	B	C	C	C	C	C
Havas	-	-	-	D	D	D	-	C-	C	C
Hays	-	-	E	D	C	C	C	D	D	D
HCL Technologies	-	-	-	-	-	-	B-	-	C	B-
HCP Inc.	-	-	D	A-	-	-	-	-	-	-
HDFC Bank Ltd	-	D	-	-	D	-	C	-	-	B
Healthpeak Properties, Inc.	-	-	-	-	-	-	-	-	A-	A-
HeidelbergCement AG	-	C	C	C	B	A-	A	A-	A-	A

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Heijmans Nv-Cva	-	-	D	-	C	D	A-	B	B	B
Heineken NV	-	D	B	B	A	B	A-	A-	C	B
Helical Plc	-	-	-	D	D	D	C	C	C	C
Hellenic Petroleum	-	-	-	-	-	-	-	-	-	B-
Hellenic Telecommunication Organisation SA	-	-	-	-	-	-	B	B	B	B
Helvetia Group	-	-	-	D	D	C	B	B	B	B
Hengan Intl Group	-	-	-	-	-	-	-	-	-	C
Henkel AG & Co. KGaA	B	C	C	B	B	B	B	B	C	C
Henry Boot plc	-	-	-	-	E	D	-	-	-	-
Henry Schein Inc.	-	-	-	-	-	-	-	-	-	D
Hera	-	B	D	B	B	B	B	A-	B	B
Heritage Oil	-	-	-	-	E	-	-	-	-	-
Herman Miller	-	-	-	-	-	E	D	C	D	C
Hermes International	-	-	-	-	-	-	-	-	-	B
Hero Motocorp Ltd	-	-	-	-	-	-	-	-	-	D
Hertz Global Holdings	-	-	-	-	-	-	C	C	C-	C
Hess Corporation	B	B	B	B	B	B	A-	A-	A-	A-
Hewlett Packard Enterprise Company	-	-	-	-	A	A	A	A	A	A
Hexpol AB	-	-	E	D	D	D	C	C	C	C
Hikma Pharmaceuticals	C	-	-	C	B	B	B	C	-	B
Hill & Smith Holdings	-	-	E	E	E	E	C	D	D	D
Hillshire Brands Company	B	-	D	-	-	-	-	-	-	-
Hilton Food Group plc	-	-	-	-	-	-	D-	-	C	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hilton Worldwide, Inc.	-	-	-	-	-	B	A-	B	B	A
Hindustan Zinc	-	-	-	-	-	-	C	B	B	B
Hino Motors, Ltd.	-	-	-	-	-	-	B	B	B-	C
Hirose Electric Co., Ltd.	-	-	-	-	-	-	C	C	-	-
Hiscox	-	-	C	C	C	C	B	C	C	C
Hispania Activos Inmobiliarios S.A.U.	-	-	-	-	-	-	-	B	B	-
Hitachi Cable, Ltd.	-	C	D	-	-	-	-	-	-	-
Hitachi Capital Corporation	-	-	-	-	-	-	-	C	B-	C
Hitachi Chemical Company, Ltd.	-	-	-	-	C	D	C	B	B-	B
Hitachi Construction Machinery Co., Ltd.	-	C	C	-	B	B	A-	A-	B	A-
Hitachi High-Technologies Corporation	-	D	D	-	-	D	C	C	C	B
Hitachi Metals, Ltd.	-	-	-	-	-	C	B	C	B	B-
Hitachi Rail STS	-	-	-	-	-	-	-	-	C	D
Hitachi, Ltd.	-	C	C	-	A	A	B	B	A-	A-
HK Electric Investments	-	-	-	-	B	B	B	B-	C	C
HNI Corporation	-	-	-	-	-	-	-	C	C	C
Hochtief AG	B	-	C	A	B	B	B	B	B	B
Hoist Finance	-	-	-	-	-	-	D	D-	-	-
Hokuriku Electric Power Company	-	D	-	-	-	-	-	-	-	-
Holidaybreak Plc	C	D	-	-	-	-	-	-	-	-
Holmen	C	C	A	B	A	B	A-	B	C-	C-
Hologic, Inc.	-	-	-	-	-	-	-	D	D	D
Home Product Center,Plc	-	-	-	-	-	-	D-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Home Retail Group	B	C	C	B	B	C	B	-	-	-
Hon Hai Precision Industry	-	-	-	-	-	D	D	D-	C	D
Honda Motor Co., Ltd.	B	A	B	A	A-	A-	A-	A-	A-	B
Honeywell International Inc.	-	-	-	B	C	D	C	B	B	B
Hong Kong Exchanges and Clearing Limited	C	C	D	D	D	B	B	B	C	C
Hongkong & Shanghai Hotels Ltd	-	-	-	-	B	C	B	C	-	C
Hongkong Land Company Limited	-	-	-	-	-	-	B	B	-	-
Horiba Ltd.	-	-	-	-	-	-	-	D	C	B-
Hormel Foods	C	-	D	D	C	D	C	C	C	C
Hornbach Holding AG & Co. KGaA	-	-	D	-	-	E	D	D	-	-
Hosken Consolidated Investments	D	D	C	D	D	D	B	B	B-	B
Host Hotels & Resorts, Inc.	-	D	C	A	A	A	A	A-	A-	A
Hotel Shilla Co., Ltd.	-	-	-	-	D	D	D	-	-	-
Hoya Corporation	-	-	E	-	E	E	D	D	-	D
HP Inc	-	-	-	-	-	-	-	A	Ã	A
HSBC Holdings plc	A	A-	B	A	A	B	A	A-	B	A-
HSS Hire Group	-	-	-	-	-	-	D-	-	-	-
HTC Corporation	-	-	-	E	D	D	C	C	C	B
Huatai Securities	-	-	-	-	-	-	-	D-	D-	C
Hub Group Inc	-	-	-	-	-	E	D	D	D	-
Huber + Suhner AG	-	-	-	C	C	A	A	A-	-	-
HudBay Minerals Inc.	-	-	C	D	C	C	C	C	D	C
Hudson's Bay Co.	-	-	-	-	D	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Hufvudstaden	B	C	B	B	B	B	B	B	-	-
Hugo Boss AG	-	-	-	-	B	C	A-	B	C	D
Huhtamäki Oyj	-	-	-	-	E	C	B	C	C	C
Hulamin	-	-	-	-	-	E	C-	D	-	B-
Humana Inc.	C	D	C	B	B	B	A-	A-	B	A-
Hunting	-	-	-	-	E	-	-	-	-	D
Huntington Bancshares Incorporated	-	-	D	C	D	D	C	C	B	B
Huntsman Corporation	-	-	-	-	-	-	-	-	-	D
Husky Energy Inc.	C	-	D	C	B	B	B	B	B	B
Husqvarna AB	D	-	E	C	C	C	B	B	B	B-
Hyatt Hotels	-	-	-	-	-	B	B	B	B	B
Hydro One Limited	-	-	-	-	-	-	-	D	C	D
Hyosung Corporation	-	-	-	-	-	C	B	-	D	D
Hypoport AG	-	-	-	-	-	-	D	-	-	-
Hyprop Investments Ltd	-	-	-	-	D	C	A-	A-	B	B
Hyundai E&C	-	-	B	-	A	A	A	A	A	A-
Hyundai Glovis Co Ltd	-	-	-	-	-	-	A-	A	A-	A-
Hyundai Marine & Fire Insurance Co., Ltd.	-	-	-	-	C	C	B	C	-	-
Hyundai Merchant Marine	-	-	C	-	B	B	-	B	-	B
Hyundai Mobis Co Ltd	-	D	C	B	B	B	A-	B	B-	B
Hyundai Motor Co	B	B	B	B	B	C	A	A-	A	A
Hyundai Steel Co	-	-	B	-	A-	A-	A-	-	B-	A-
Iamgold Corporation	-	-	-	-	-	E	C	D	C	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Iberdrola SA	A	C	A	B	A	A	A	A-	A-	A-
Iberia Lineas Aereas de Espana SA	-	D	-	-	-	-	-	-	-	-
Ibiden Co., Ltd.	-	C	C	-	C	D	C	C	C	D
ICA Gruppen	B	B	C	-	-	-	-	-	-	-
Icade	-	-	-	B	B	B	A	A-	A-	A-
ICF International	-	-	-	-	-	-	C	C	A-	A-
ICICI Bank Limited	-	E	-	-	-	-	-	-	-	-
ICL	-	B	B	B	A	B	A-	A-	B	A-
ID Logistics	-	-	-	B	A-	D	B	-	-	-
Idacorp Inc	-	-	-	-	-	D	C	C	D	-
IDBI Bank Ltd	-	-	-	-	-	-	D	-	-	-
Idemitsu Kosan Co., Ltd.	-	-	-	-	-	-	-	-	-	B
IDFC Bank Ltd	-	-	-	-	-	-	-	C	-	-
IDFC Ltd	-	-	-	-	-	-	C-	-	-	-
IGM Financial Inc.	-	-	-	C	B	B	A-	A-	A	A
IGO Ltd	-	-	-	-	-	-	-	-	D	-
IGT PLC	-	-	-	-	-	C	B	A-	C	C
IHI Corporation	-	-	-	-	A	B	A-	B	B	B
IHS Markit Ltd.	-	-	-	-	-	-	C-	C	D	C
Illinois Tool Works Inc.	C	C	E	C	D	E	C	C	C	C
Illovo Sugar Ltd	-	-	D	C	C	C	B	-	-	-
Illumina Inc	-	-	-	-	-	-	-	D-	D-	C
Iluka Resources	-	-	-	-	-	-	D	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
IMA SpA	-	-	-	-	D	C	C	C	C	C
Imerys	-	B	B	B	B	B	B	B	C	B
IMI plc	-	-	-	-	B	D	C	C	D	D
Immobiliare Grande Distribuzione SpA	-	-	-	-	-	E	C	C	C	D
Impala Platinum Holdings	B	C	B	B	B	C	A-	B	C	B
Impax Asset Management Group plc	-	-	-	-	-	-	-	-	-	D
Impax Environmental Markets	D	E	E	E	D	E	D	D	D	-
Imperial Brands	C	D	D	B	C	B	B	A-	B	A
Imperial Holdings	C	D	D	C	C	C	B	C	B	B
Imperial Oil	-	C	D	D	D	D	D	D	-	-
Inapa - Investimentos, Participações e Gestão, SA	-	-	-	-	-	-	D	-	-	D
Inchcape	-	-	-	-	-	-	-	-	C	C
Incitec Pivot	-	D	D	C	D	B	C	C	D	C
Independence Group	-	-	-	-	-	E	D	D	-	C
Indian Hotels Co. Ltd.	-	-	-	-	-	-	C	C	C	C
Indian Oil Corporation	-	-	-	-	-	-	C	C	D	C
Inditex	C	D	B	B	A-	B	A	A-	A-	A-
Indivior	-	-	-	-	-	-	C	C-	C	C
Indo Tambangraya Megah Pt	-	-	-	-	-	E	C	C	D	C
Indorama Ventures PCL	-	-	-	-	-	-	B	B	B	B
Indra	-	E	D	D	C	C	C	C	A-	B
Indus Holding AG	-	-	C	-	C	B	A	A	A	A
Indusind Bank	-	-	-	-	-	-	A-	A-	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Industrial Alliance Insurance and Financial Services Inc.	-	-	-	-	-	-	-	-	D	C
Industrial And Commercial Bank Of China Limited	-	-	-	-	-	-	-	D-	-	-
Industrial Bank of Korea	-	-	C	-	C	C	B	-	A-	A-
Industrias Peñoles	-	-	-	-	E	E	-	-	D	-
Industrivärden	-	-	E	E	D	D	C	C	C	C
Infigen Energy	-	E	-	-	-	D	B	-	-	D
Infineon	-	D	D	-	D	C	B	B	B	B
Infinis	-	-	-	-	-	C	-	-	-	-
Informa	C	E	E	D	C	-	-	-	-	-
Infosys Limited	-	D	C	-	-	-	A-	A	A	A-
ING Group	B	D	B	B	A	A	A	A	A	A
Ingenico	-	-	-	-	B	B	B	B	B	B
Ingersoll-Rand Co. Ltd.	-	-	-	-	-	-	-	A-	-	A-
Ingredion Incorporated	-	-	-	-	-	-	-	C	B	A-
Inmarsat	-	-	-	-	-	C	B	B	B	B
Inmobiliaria Colonial	-	-	-	-	-	-	-	C	C	C
Innate Pharma SA	-	-	-	-	-	E	-	-	-	-
Innogy SE	-	-	-	-	-	-	-	-	-	C
Innolux Corporation	-	C	-	-	B	B	A-	B	B	B
Inpex Corporation	B	C	D	-	B	C	A-	C	C	B
Inscape Corporation	-	-	-	-	-	-	D	D	C	D
Insurance Australia Group	-	B	A	B	A	B	A-	B	C	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Intact Financial Corporation	-	-	D	D	C	D	C	D	D	C
Integrated Device Technology, Inc.	-	-	-	-	-	E	C-	C-	D	D
Intel Corporation	B	C	A	B	B	B	A-	A-	C	B
Inter Pipeline Ltd.	-	-	-	-	-	-	-	C	D	C
Inter Rao Ues OAO	-	-	-	-	-	-	-	D-	D-	D
Interconexion Electrica Sa	-	-	-	-	-	-	B	C	-	-
Intercontinental Hotels Group	C	C	C	B	B	B	A-	B	B	-
Interface, Inc.	-	-	-	-	-	B	-	-	-	-
Intermediate Capital Group	-	-	-	E	-	-	-	-	-	A-
International Business Machines (IBM)	-	B	B	B	B	B	B	B	B	B
International Consolidated Airlines Group, S.A.	-	-	C	B	B	C	C	A	B	B
International Flavors & Fragrances Inc.	C	D	B	B	A-	A	A	A	A	A
International Paper Company	-	C	C	C	B	-	C	C	C	B
International Personal Finance	C	D	C	C	C	E	-	-	-	-
International Power	B	C	-	-	-	-	-	-	-	-
Interpublic Group of Companies, Inc.	-	-	-	-	-	-	D	C-	B-	B-
Interserve Plc	A	C	B	C	B	B	B	A-	B	B
Intertek Group	-	-	E	D	D	C	B-	C	C	C
Intesa Sanpaolo S.p.A	B	C	A	-	A	A	A	A	A	A
Intu Properties plc	-	C	C	B	C	C	C	C	C	C
Intuit Inc.	-	D	D	B	D	C	B-	C	D	C
Invensys	-	-	-	B	-	-	-	-	-	-
Inventec Co Ltd	-	-	-	-	C	B	B	B	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Invesco Ltd	B	D	D	D	D	C	C	C	B	B-
Investa Office Fund	-	C	C	B	A	A	-	A-	-	-
Investec Limited	-	B	C	A-	B	A	A-	B	B	B
Investment AB Latour	-	-	-	-	-	-	-	C-	D	D
Investor AB	D	D	C	C	-	-	-	-	-	B-
InvoCare	-	C	D	D	-	E	-	-	-	-
Inwido Ab	-	-	-	-	-	-	C	C	D	B-
IOI Corporation Berhad	-	-	-	E	E	-	-	-	C	D
Ion Beam Applications S.A. (IBA)	-	-	-	-	-	-	-	C	C	C
Ipsen	-	-	-	-	-	-	D	B-	B	A-
Ipsos	-	-	-	E	C	C	C	B	D	C
IQVIA	-	-	-	-	-	D	C	C	C	B-
Iren SpA	-	-	-	-	B	C	A	A	A-	B
Iron Mountain Inc.	-	-	-	B	C	C	B	C	B-	B
Isetan Mitsukoshi Holdings Ltd.	-	-	-	-	-	-	-	-	-	A-
ISG plc	-	-	-	-	B	B	A-	A-	B	A-
ISS	-	-	-	-	-	B	B	C	D	-
Isuzu Motors Limited	-	-	-	-	-	-	B	A-	A-	A-
Italcementi	-	C	B	B	A	B	A-	-	-	-
Italgas	-	-	-	-	-	-	-	A-	B	B
Italtile Ltd	-	-	-	-	-	-	D	-	-	-
Itaú Unibanco Holding S.A.	B	C	C	C	B	B	A-	B	A-	B
Itausa Investimentos Itau S.A.	-	C	B	-	B	C	A-	B	A-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ITC Limited	C	D	B	B	B	-	A-	A-	-	-
ITE Group	-	-	-	D	D	D	-	-	-	-
Ito En, Ltd.	-	-	-	-	-	-	-	-	-	B-
Itochu Corporation	-	D	D	-	B	B	B	A-	B	B
Itochu Techno-Solutions Corporation	-	-	-	-	-	E	-	-	-	-
ITT Corporation	C	C	-	-	-	-	-	-	-	-
IVG Immobilien AG	-	-	-	D	-	-	-	-	-	-
IWG plc	-	-	C	C	B	D	B	B	B	B
J Sainsbury Plc	C	-	B	B	A	A	A	A	A	A
J. Front Retailing Co., Ltd.	-	-	-	-	-	-	D-	-	D-	A-
J.B. Hunt Transport Services, Inc.	-	-	-	-	-	E	C	C	D	D
Jabil Inc.	C	C	C	C	C	-	-	D	D	D
Jacobs Engineering Group Inc.	-	E	D	D	D	D	C	D	D	C
Jain Irrigation Systems	-	-	-	-	-	-	D	-	-	-
James Hardie Industries	-	-	-	-	-	-	-	C-	D	C
Janus Henderson Group PLC	-	-	-	-	-	-	-	B	B	B
Japan Airlines Corporation	-	-	-	-	-	-	-	D	D	B
Japan Display Inc.	-	-	-	-	-	D	B	D	C	C
Japan Post Bank	-	-	-	-	-	-	-	-	-	D
Japan Post Holdings	-	-	-	-	-	-	-	-	-	C
Japan Real Estate Investment	-	-	-	-	-	-	-	-	-	B
Japan Retail Fund Investment	-	-	-	-	-	-	C	C	C	B
Japan Tobacco Inc.	-	-	B	-	A-	B	A	A-	A-	A

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jardine Lloyd Thompson Group Plc (JLT)	-	-	-	-	-	-	C-	C-	D	-
JB Hi-Fi	-	E	E	E	E	E	C-	C-	D	C
JBS S.A	-	-	-	D	C	B	A-	B	B	B
JCDecaux SA.	-	D	C	B	B	C	B	B	C	A
jcpenny	C	D	-	B	B	C	C	C	B-	B-
JD Sports Fashion	-	-	-	-	-	E	D	D	B	B
Jenex Co.,Ltd	-	-	-	-	-	-	-	-	-	C
Jenoptik AG	-	-	-	-	-	-	D	-	-	-
Jeongsan International Co., Ltd	-	-	-	-	-	-	D	D	D	D
Jerónimo Martins SGPS SA	C	E	E	C	B	B	A-	B	A-	A-
Jetblue Airways Corporation	-	-	-	-	-	-	C	C	C	C
JFE Holdings, Inc.	-	-	-	-	-	D	B	C	D	B
Jiangxi Black Cat Carbon Black Co., Ltd.	-	-	-	-	-	-	-	-	B	B
JK Tyres & Industries	-	-	-	-	-	-	-	C	C	C
JKX Oil and Gas	-	-	-	E	E	E	C	D	-	-
JLL	-	-	-	-	-	-	B	C	C	B
JM AB	C	D	B	B	C	B	A-	B	B-	B
John Laing	-	-	-	-	-	-	-	-	-	B
Johnson & Johnson	C	C	B	A-	B	B	A-	A-	A	A
Johnson Controls	A	B	B	A-	A	B	A	-	-	-
Johnson Controls International PLC	C	C	-	-	D	D	D	A-	B	B
Johnson Matthey	C	D	D	C	A	B	A-	B	B	B
JPMorgan Chase & Co.	C	B	B	B	B	B	A-	A-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
JSE Ltd	-	E	E	-	-	E	C	C	D	B
JSP	-	-	-	-	-	-	C-	D	-	-
JSR Corporation	-	-	-	-	-	D	B-	B-	B	B-
JSW Cement Limited	-	-	-	-	-	-	-	-	-	C
JSW Energy	-	-	-	-	-	-	-	C	C	C
JSW Steel	-	-	-	-	-	-	-	C	D	B
JTEKT Corporation	-	-	-	-	-	C	B	A-	A-	A-
Jubilant Life Sciences Ltd	-	-	-	-	-	-	-	D	C	C
Julius Bär Group LTD	-	-	-	-	-	-	C	D	-	-
Juniper Networks, Inc.	B	E	B	B	A	A	A-	A-	A-	A-
Jupiter Fund Management	-	-	E	E	C	B	B	A-	A-	B
Just Group	-	-	-	-	-	E	C	D	D	D
JVC Kenwood Corporation	-	-	-	-	-	-	-	-	-	C
JXTG Holdings, Inc.	-	-	D	D	-	C	C	C	-	B
Jyske Bank A/S	-	-	-	-	-	-	-	D-	D	D
K + S AG	-	D	B	D	C	D	-	-	C	C
Kaba Holding AG	-	-	-	E	D	E	-	-	-	-
Kagome Co., Ltd.	-	-	-	-	-	-	-	B	B-	B
Kajima Corporation	-	-	C	-	B	B	A	A-	B	B
Kaneka Corporation	-	C	C	-	C	B	A-	B	B	B-
Kansas City Southern	-	-	-	-	-	-	-	-	D	B
Kao Corporation	-	A-	C	-	B	B	A-	A-	A-	A
KAP Industrial Holdings Ltd	-	-	-	D	-	D	B-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kapsch TrafficCom AG	-	-	-	-	-	-	C	-	-	-
Kardemir Karabuk Demir Çelik Sanayi ve Ticaret A.Ş.	-	-	-	-	D	E	-	-	D	D
Karoon Gas Australia	-	-	-	-	-	D	C	-	-	-
Kasikornbank	-	-	-	-	D	D	C	B	B	A-
Kathmandu Holdings	-	-	-	-	C	B	B	C	B	B
Kaufman & Broad Sa	-	-	-	-	-	-	-	D	B	B
Kawasaki Heavy Industries, Ltd.	-	C	B	C	C	B	B	B	C	B
Kawasaki Kisen Kaisha, Ltd.	-	-	D	-	A	B	A	A	A	A
KAZ Minerals	-	-	E	D	D	D	D	D	D	D
KB Financial Group	B	C	C	-	C	D	D	A-	A-	A-
KBC Group	C	D	D	C	C	C	B	A-	A-	A-
KCC	-	-	C	-	C	C	D	-	-	-
KCOM	-	E	D	D	B	E	-	D	-	D
KDDI Corporation	-	-	D	-	B	C	B	B	C	B
Keller	-	D	-	-	D	-	B	A-	B	B
Kellogg Company	C	B	C	B	B	C	A-	B	B	B
Kemira Corporation	-	-	C	B	B	B	A-	A-	B	B
Kendrion NV	-	-	-	-	-	D	-	-	-	-
Keppel Corp	-	-	-	D	D	C	C	C	D	C
Keppel Land Limited	-	-	-	-	-	C	-	-	-	-
Kering	-	C	D	B	A	B	A-	A	A	A
Kernel Holding	-	-	-	-	-	-	-	D	D	C
Kerry Group PLC	-	-	D	-	B	C	A-	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kesko Corporation	C	B	B	B	A-	A	A-	A-	A-	B
Keurig Dr Pepper	-	-	-	-	-	-	-	-	-	B
Kewpie Corporation	-	-	-	-	-	-	-	-	-	D
KeyCorp	-	-	B	A	B	B	A-	A-	B	A-
Keyera Corp.	-	-	C	D	D	D	B	C	D	D
Keysight Technologies Inc	-	-	-	-	-	-	-	-	-	C
Kia Motors Corp	-	-	-	-	-	-	-	-	-	A
Kier Group	B	B	C	C	C	C	B	C	C	-
Kikkoman Corporation	-	-	-	-	C	B	A-	B	B-	A-
Kilroy Realty	-	-	-	-	-	-	-	B	B	B
Kimberly-Clark Corporation	D	C	D	C	C	B	A-	A-	B	A-
Kimco Realty	-	-	-	C	B	B	B	A-	B	B
Kinden Corporation	-	-	-	-	-	-	-	-	D-	D-
Kindred Group	-	-	E	D	D	D	C	C	C	B-
Kingfisher	A	B	B	B	A-	B	B	A-	A-	-
Kingspan Group PLC	-	-	-	-	B	A	A	A	-	A
Kinnevik AB	C	D	D	-	-	-	-	-	-	-
Kinross Gold Corporation	-	D	D	B	C	C	C	C	C	C
Kintetsu Group Holdings Co.,Ltd.	-	C	C	C	B	B	B	B	C	B
Kion Group AG	-	-	-	-	-	-	-	-	B	B
Kirby Corporation	-	-	-	-	-	E	-	-	-	-
Kirin Holdings Co Ltd	B	A-	A-	-	A	A	A	A	A-	A
Kiswire Ltd.	-	-	-	-	-	-	C-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kiwi Property Group	-	C	D	A	B	A	A-	A-	B	A-
Klabin S/A	-	-	-	-	B	C	A-	B	A	A
KLA-Tencor Corporation	-	-	-	-	-	-	-	D-	-	-
Klepierre	D	D	D	B	B	B	A	A	A	A-
Klöckner & Co SE	-	-	-	E	-	-	D	D-	-	-
Klövern	-	-	-	-	C	D	C	-	-	B
KLP	-	-	-	-	-	-	-	-	C	B
Knoll, Inc.	-	-	-	-	-	D	-	D	D	D
Kobayashi Pharmaceutical Co., Ltd.	-	-	-	-	-	-	-	-	-	C
Kobe Steel., Ltd.	-	-	-	-	D	E	C	D	D	D
Kobenhavns Lufthavne	-	-	C	C	B	-	-	-	-	-
Kohler Co.	-	-	-	-	-	-	-	-	-	C
Kohl's Corporation	C	C	C	B	C	C	C	D	C	A-
Koito Manufacturing Co., Ltd.	-	-	-	-	-	-	C	C	C	C
Kokuyo Co., Ltd.	-	C	C	-	B	C	B	C	C	C
Kolon Industries, Inc.	-	-	-	-	-	-	-	C-	C	D
Komatsu Ltd.	C	C	D	A	A	B	A	A	A	A
Komax AG	-	-	-	-	-	D	-	-	-	-
Kone Oyj	B	B	B	A-	A-	A	A	A-	A-	A
Konecranes	C	D	D	-	D	C	B	C	B	B
Kongsberg Automotive Holding ASA	-	-	-	-	-	-	-	D	D	C
Kongsberg Gruppen ASA	-	D	D	C	D	E	B	C	-	-
Konica Minolta, Inc.	-	B	B	-	A	B	A	A	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Koninklijke DSM	-	D	D	C	C	C	A	A	A-	A-
Koninklijke KPN NV (Royal KPN)	-	B	A	A	A	B	A	A	A-	A
Koninklijke Philips NV	A	A	A-	A	A	A	A	A	A	A
Kontron AG	-	-	D	D	D	D	C	D	-	-
Koppers Holdings Inc	-	-	-	-	-	-	C-	C-	C	C
Kordsa Teknik Tekstil A.Ş.	-	-	-	-	-	-	-	-	C	B
Kordsa Teknik Tekstil AŞ	-	-	-	-	-	-	D	D	-	-
Korea District Heating Corp.	-	-	C	-	A	A-	A	A-	A-	A-
Korea Electric Power Corp	-	-	-	B	B	B	A	A-	A-	A-
Korea Gas Corp	-	-	C	-	B	B	B	-	B	B
Korea South-East Power	-	-	-	-	-	-	-	B	B	B
Korean Air Lines Co Ltd	-	-	B	-	-	C	C	-	-	-
Korian-Medica	-	-	-	-	-	-	-	D	-	D
KOSE Corporation	-	-	-	-	-	-	-	-	-	B
Kotak Mahindra Bank	-	-	-	-	-	-	C	C	C	C
KP Chemical Corp	-	-	B	-	-	-	-	-	-	-
Krasnoyarskaya GES OAO	-	-	-	-	-	E	C-	C-	-	-
Kroger	-	-	D	D	D	C	B	B	C	C
Krones AG	-	-	E	C	C	D	D	D	D	D
Krug Inc.	-	-	-	-	-	E	D	D	-	-
KSB AG	-	-	E	E	E	E	C	C	-	-
KT Corporation	-	-	B	-	A	A	A	A	A-	A-
KT&G	-	-	-	-	-	-	D-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Kubota Corporation	-	B	-	-	B	C	A-	A-	A-	A-
Kuehne + Nagel International AG	B	D	B	B	B	B	B	B	C	-
Kuka AG	-	-	-	-	-	-	D	D	D	-
Kumagai Gumi Co Ltd	-	-	-	-	-	-	-	-	-	B
Kumba Iron Ore	B	B	C	B	B	A	A	A-	B	B
Kumho Petrochemical	-	-	-	-	-	-	D	-	D	-
Kungsleden AB	C	C	D	C	-	-	-	-	-	-
Kuraray Co., Ltd.	-	C	C	B	C	D	B-	C	-	C
Kurita Water Industries Ltd.	-	-	-	-	D	D	C	C	C	C
Kyocera Corporation	B	C	E	-	B	C	B	B	A-	A-
L3Harris Technologies INC	-	-	-	-	-	-	-	-	C	B-
La Banque Postale	-	-	-	-	-	-	-	-	-	A-
Laboratory Corporation of America Holdings	-	-	-	-	-	-	-	-	-	B
Lafarge S.A.	A	A-	B	B	B	C	-	-	-	-
LafargeHolcim Ltd	B	C	B	C	B	B	A-	A-	B	A-
Lagardere S. C. A.	-	D	E	D	D	D	C	D	D	C
Laird Plc	-	E	D	C	C	C	B-	C	-	-
Lam Research Corp.	-	-	-	-	-	C	C	C	B	B
Lamprell Plc	-	-	-	-	-	E	C	C	D	C
Lancashire Holdings	-	-	-	D	D	-	C	C	C	C
Landsec	-	D	B	B	A-	C	A-	A	A	A
Lanxess AG	-	-	B	B	B	C	A	A	A-	A
Larsen & Toubro	B	C	B	B	A	A-	C	B	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Larsen & Toubro Infotech Ltd	-	-	-	-	-	-	-	D	-	B-
Las Vegas Sands Corporation	-	-	C	A-	A-	A	A	A	A	A
Lassila & Tikanoja	C	D	D	-	B	B	A-	A-	A-	A-
Laurentian Bank of Canada	-	-	-	-	-	-	D	D-	D-	D-
Lawson, Inc.	-	-	-	B	B	B	A-	A-	-	-
Lear	-	-	-	-	-	-	-	C	C	C
Leasinvest Real Estate Sca	-	-	-	-	-	-	-	D-	-	-
Legal and General	C	C	C	C	C	C	C	B-	B	B
Legg Mason, Inc.	C	E	C	B	B	C	A-	C	C	B
Leggett & Platt, Inc.	-	-	-	-	-	-	-	D-	D-	D-
Legrand	C	C	D	B	C	C	B	B	A-	A-
Leidos	-	-	-	-	-	-	-	-	C	B
Lemminkainen Group	-	C	E	C	C	-	-	-	-	-
Lennox International Inc	-	-	-	-	-	-	A-	A-	B	B
Lenovo Group	-	B	B	-	B	B	A-	A-	B	A-
Leonardo	C	C	C	B	C	C	B	A-	A-	A-
Leoni AG	-	-	E	D	-	D	C	C-	D	C
Lerøy Seafood Group	-	-	-	D	C	D	B	C	C	C
Level 3 Communications, Inc.	-	-	-	-	-	B	A-	A-	A	-
Levi Strauss & Co.	-	-	-	-	-	-	-	-	-	B
Lewis Group	-	D	D	-	-	-	-	-	-	-
Lexmark International, Inc.	-	-	-	-	-	D	C	C	C	C
LG	-	-	-	-	C	B	A-	A-	A-	A

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
LG Chem Ltd	-	B	B	B	A	A-	A	A-	A-	B
LG Display	-	-	C	-	B	B	A	A	A	A
LG Electronics	-	-	A	-	A	A	A	A	B	A
LG HAUSYS	-	-	B	-	C	C	A-	A-	B	B
LG Household & Health Care	-	-	-	-	C	C	B	B	B	B
LG Innotek	-	-	B	-	B	A	A	A-	B	A
LG International	-	-	-	-	-	D	C	C	D	-
LG Life Sciences	-	-	-	-	C	B	A-	-	-	-
LG Uplus	-	-	-	-	B	A	A	A-	A-	A
Li & Fung Limited	-	-	B	B	B	D	C	C	D	C
Liberty Global plc	-	-	-	-	C	B	A-	A-	C	C
Liberty Holdings Ltd (incorporating Liberty Life Group Ltd)	C	C	D	D	C	E	C	C	B	B
Liberty Property Trust	-	-	-	-	-	-	C	-	-	-
Life Healthcare Group Holdings Ltd	-	-	-	E	C	D	C	C	D	D-
Light SA	-	-	-	-	D	D	C	C	D	D
Lincoln National Corporation	-	-	-	-	D	D	B	B	B	B
Lindab AB	C	C	C	-	-	-	-	-	-	-
Linde AG	B	C	B	A-	B	B	B	A-	C	-
Linde PLC	-	-	-	-	-	-	-	-	A-	A-
Linear Technology Corp.	-	-	-	-	D	D	C-	D	-	-
Link Real Estate Investment Trust	-	-	C	C	B	D	B	-	-	-
Lintec Corporation	-	-	-	-	-	-	-	C-	D	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Linx SA	-	-	-	-	-	-	-	D	-	-
Lion Corporation	-	C	C	B	B	B	B	C	B	B
Liontrust Asset Management PLC	-	-	-	-	-	-	-	-	-	D-
Lite-On Technology Corporation	-	-	-	-	B	B	A-	B	B	A
Lixil Group Corporation	-	-	D	-	B	B	B	B	B	A-
Lloyds Banking Group	B	B	B	B	B	B	A	A	A	A
Loblaw Companies Limited	-	-	E	D	D	E	C	C	D	C
Lockheed Martin Corporation	B	A	A	A	A	A-	A	A	A	A-
Logitech Europe S.A.	-	-	-	-	-	-	-	-	D	-
Logitech International SA	-	-	-	D	C	D	C	C	-	C
Lojas Americanas S/A	-	-	-	-	E	E	D	C	C	C
Lojas Renner S.A.	-	-	-	-	C	C	A-	C	C	B
London Stock Exchange	-	-	E	D	B	B	A-	A-	A-	A-
Lonmin	B	C	B	B	B	B	A-	B	B	B
Lonza Group AG	-	-	E	D	C	E	D	D	D	D
Loomis AB	-	-	-	-	-	-	-	D	-	-
L'Oréal	B	C	B	-	A	A	A	A	A	A
Lotte Chemical Corp	-	-	-	-	B	B	A-	B	C	-
Lotte Shopping	-	-	-	-	C	-	-	-	-	-
Lowe's Companies, Inc.	C	-	C	D	D	D	B	B	C	B
LS Electric Co Ltd	-	-	-	-	-	-	-	-	D	-
LSI Corporation	B	C	B	B	-	-	-	-	-	-
Lukoil OAO	-	-	-	-	-	-	D	D	-	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Lululemon Athletica Inc.	-	-	-	E	-	D	B	C	-	-
Lundbeck A/S	-	B	D	B	A	B	A	A	A-	A
Lundin Energy AB	-	-	-	-	-	-	-	-	A-	-
Lundin Mining Corporation	-	-	-	-	D	D	C	C	B	B
Lundin Petroleum	B	D	D	C	B	D	B-	C	-	B
Luxshare Precision Industry	-	-	-	-	-	-	-	-	D	-
LVMH	B	C	D	C	B	C	-	-	-	D
Lynas Corporation	-	-	-	-	-	E	-	-	-	-
LyondellBasell Industries N.V.	-	-	-	-	-	-	-	C	C	D
M&T Bank Corporation	B	C	C	D	D	D	C	-	-	-
Macerich Co.	-	-	-	-	-	A	A	A-	A	A
Macquarie Group	-	C	C	B	B	D	B	C	C	B
Macy's, Inc.	-	-	-	-	-	-	D-	D	C	C
Maeda Corporation	-	-	-	-	-	-	-	-	-	C
Magellan Financial Group	-	-	-	-	-	-	C	C	C	C
Magna International Inc.	-	-	E	E	E	-	D	D	D	C
Magyar Telekom Nyrt.	-	-	-	-	-	-	-	C	C	B
Mahindra & Mahindra	-	-	-	-	-	-	B	B	B	A-
Mahindra & Mahindra Financial Services	-	-	-	-	-	-	B	B	C	C
Mahindra Lifespace Developers Limited	-	-	-	-	-	-	B	B	D	B
Mainstream Renewable Power	-	-	-	-	-	-	-	C	A-	A-
Maire Tecnimont SpA	-	-	-	-	-	-	D-	C	B	B
Maisons du Monde SA	-	-	-	-	-	-	-	B	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Makita Corporation	-	-	-	-	-	-	-	-	-	D
Malayan Banking	-	-	D	-	-	E	C	C	D	D
Mallinckrodt plc	-	-	-	-	-	-	-	C-	D	C
Man Group plc	C	D	-	-	-	-	-	-	-	C
MAN SE	C	D	B	B	A	A-	-	-	-	-
Mando	-	-	-	-	-	-	D-	-	-	-
Manitoba Telecom Services	-	-	-	D	D	D	C	-	-	-
ManpowerGroup	-	-	-	-	-	-	C	C	C	C
Manulife Financial Corp.	-	-	C	C	C	D	B	B	B	B
MAPFRE	C	C	C	B	B	A	A	A	A-	A-
Maple Leaf Foods Inc.	-	-	E	E	D	E	C	-	C	C
Marfrig Global Foods S/A	-	-	-	-	C	C	B	B	C	B
Marico	-	-	-	-	-	-	-	-	-	C
Marine Harvest Group	-	C	-	B	C	C	A-	A-	-	-
Marks and Spencer Group plc	B	B	A	B	B	B	B	B	B-	B
MARR SpA	-	-	-	-	-	-	D-	D-	D	D
Marriott International, Inc.	B	B	B	B	C	C	B	B	C	B
Mars	-	-	-	-	-	C	A-	A-	B	A-
Marsh & McLennan Companies, Inc.	D	C	B	B	B	B	A-	B	A-	B
Marshalls	C	D	D	B	B	B	B	B	B	D
Marston's PLC	-	E	-	D	-	-	-	-	-	-
Martinrea International Inc.	-	-	-	-	-	-	C-	D	-	-
Marubeni Corporation	-	B	C	C	B	C	B	B	B	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Marui Group Co., Ltd.	-	-	-	-	-	-	A-	A-	A	A
Marvell Technology Group, Ltd.	-	-	-	-	-	D	-	-	D-	C
Masco Corporation	B	C	C	C	B	-	-	C-	D	C-
Masdar	-	-	-	-	-	-	-	C	-	-
Massmart Holdings Ltd	B	C	C	B	C	C	C	A-	B	-
MasterCard Incorporated	-	-	-	-	-	-	D	C	C	B
Matsui Securities Co., Ltd	-	-	-	-	-	-	D-	D-	-	-
Mattel, Inc.	-	-	-	D	C	D	C	D	-	D
Maurel Et Prom	-	-	-	-	-	E	C	B	A-	A-
Maxim Integrated Products, Inc.	-	-	-	-	-	D	-	-	D	C
Mayr-Melnhof Karton Aktiengesellschaft	-	-	-	-	-	-	C	D	C	C
Mazda Motor Corporation	-	C	C	-	B	B	A-	A-	B	A-
McBride plc	C	-	C	C	C	D	B	-	-	-
McCormick & Company, Incorporated	C	C	C	C	C	D	C	C	C	C
McDonald's Corporation	-	-	D	D	C	D	C	C	C	C
McKesson Corporation	-	-	-	-	-	-	D	C	C	B
Mead Johnson Nutrition Company	-	-	D	-	-	-	-	-	-	-
Meda AB	C	D	C	C	B	B	B	-	-	-
Mediaset Espana Comunicacion SA	-	-	-	E	B	B	A-	B	B	A-
MediaTek	-	-	-	-	-	-	D	D	-	-
Medibank Private	-	-	-	-	-	-	-	D	D	D
Mediclinic International	-	-	-	B	A	A-	A	A-	B	B
Mediobanca	-	-	-	-	B	C	B	-	-	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Medtronic PLC	C	-	-	-	D	D	C	C	C	B-
MEG Energy Corp.	-	-	-	-	-	-	-	C	B	B
Meggitt	-	-	-	-	C	D	D	C	D	C
Megmilk Snow Brand Co Ltd	-	-	-	-	-	-	D-	-	D	D
Meidensha Corporation	-	-	-	-	-	-	-	-	C	B
Meiji Holdings Co Ltd	-	-	-	-	-	-	-	D	C	A-
Meliá Hotels International S.A.	-	C	C	B	B	A	A-	A-	B	B
Mercialys	-	-	-	-	-	-	-	A-	A	A
Merck & Co., Inc.	B	B	B	B	B	B	B	A-	A-	B
Merck KGaA	C	C	B	B	B	C	A-	B	C	C
Mercury NZ Limited	-	-	-	-	-	-	-	-	C	C
Meridian Energy	-	-	-	-	C	-	-	-	-	B
Merlin Entertainments Group	-	-	-	-	-	D	C	C	C	B-
Metcash	-	C	B	-	B	B	B	C	C	D
MetLife, Inc.	-	-	C	A-	B	B	A-	A-	A-	A-
Metro AG	-	-	-	-	-	-	-	-	-	B
Metro Inc.	-	-	C	C	C	D	C	C	C	C
Metro Pacific Investments	-	-	-	-	-	-	-	-	-	C
Metsä Board Corporation	B	C	C	C	B	B	A	A	A	A
Metso	C	-	B	A-	B	B	A-	A-	B	B
Mettler-Toledo International Inc.	-	-	-	-	-	D	-	D	D	D
Mexichem SAB de CV	-	-	-	-	-	-	-	B-	-	-
MGM Resorts International	-	-	-	-	-	D	C	C	B	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Michelin	-	B	C	B	B	B	A	A-	A	A-
Micro Focus International	-	-	-	D	-	E	D	C-	-	C
Microchip Technology	C	C	B	B	C	D	C	C	D	C
Micron Technology, Inc.	-	-	-	-	-	-	D	C	B-	C
Microsoft Corporation	B	B	B	A	A	A	A	A	A	A
Micro-Star International Co, Inc	-	-	-	-	-	D	C	-	-	-
Midea Group Co Ltd	-	-	-	-	-	-	-	-	-	D
Migros Ticaret A.Ş.	-	-	-	-	-	D	A-	A-	B	A-
Millennium & Copthorne Hotels	-	D	E	C	D	E	B	A-	A-	B
Millicom International Cellular SA	-	-	D	B	B	C	B	C	D	B
Mindtree Ltd	-	-	-	-	-	-	-	C	C	C
MinebeaMitsumi Inc.	-	-	-	-	-	-	-	-	-	B
Mineral Resources	-	-	-	-	-	E	C-	D	D	C
Ming Fai International Holdings Limited	-	-	-	-	-	-	-	C	C	C
Minor International PCL	-	-	-	-	-	-	C	C	C	C
Minth Group Ltd	-	-	-	-	-	-	-	D-	-	-
Miquel Y Costas	-	-	-	C	C	C	B	B	B	B
Miraca Holdings Inc.	-	-	-	-	-	-	-	-	-	C
Mirae Asset Daewoo Co.,Ltd.	-	-	-	-	C	B	B	B	B	B
Mirvac Group	-	A	A	B	B	D	B	-	B-	-
MiTAC Holdings Corporation (MHC)	-	-	-	-	-	D	C	C	C	-
Mitchells & Butlers	-	-	-	-	-	D	-	-	-	D
Mitie Group	B	B	C	C	D	D	C	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Mitsubishi Chemical Holdings Corporation	-	C	C	C	B	B	B	A-	B	A-
Mitsubishi Corporation	C	C	D	-	D	B	A-	B	C	B
Mitsubishi Electric Corporation	-	E	D	-	C	C	A	A	A	A-
Mitsubishi Estate Co., Ltd.	-	-	-	C	C	D	B	B	B	A-
Mitsubishi Gas Chemical Company, Inc.	-	D	D	-	B	C	A-	A-	B	B-
Mitsubishi Heavy Industries, Ltd.	-	-	-	-	E	E	B	B	B	A-
Mitsubishi Materials Corporation	-	C	C	-	B	B	A-	A-	B	B
Mitsubishi Motors Corporation	-	-	-	-	-	-	-	B	B	B
Mitsubishi Tanabe Pharma Corporation	-	-	-	-	-	-	-	-	-	B
Mitsubishi UFJ Financial Group, Inc.	C	C	B	-	B	C	C	C	C	C
Mitsui & Co., Ltd.	-	D	C	-	B	B	A-	B	B-	B
Mitsui Chemicals, Inc.	-	C	C	-	B	B	B	B	B	B
Mitsui Engineering & Shipbuilding Co Ltd	-	-	-	-	-	-	D-	-	-	-
Mitsui Fudosan Co., Ltd.	-	-	B	-	C	D	B	C	C	B
Mitsui Mining & Smelting Co., Ltd.	-	-	-	-	-	-	-	D	D	D
Mitsui O.S.K. Lines Ltd	-	B	B	-	A	A-	A-	A-	B	B
Mizuho Financial Group, Inc.	B	C	A	-	A-	B	B	B	B-	B
MMI Holdings Ltd	-	D	D	D	D	C	A-	B	-	-
Mobile TeleSystems PJSC	-	-	-	-	-	-	-	-	-	C
Mobimo	-	-	-	C	B	B	B	B	B	B
Modern Times Group MTG AB	C	D	B	B	B	C	B	B	-	-
ModusLink Corporation	-	-	-	-	-	C	C	C	C	D
Mohawk Industries, Inc.	-	-	-	-	-	-	-	D	D	B-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
MOL Nyrt.	-	-	-	-	-	-	-	B	D	C
Molex, LLC	-	E	E	D	-	-	-	-	D	C
Molson Coors Brewing Company	C	A	B	A-	B	B	A-	A-	B	-
Momentum Metropolitan Holdings Ltd.	-	-	-	-	-	-	-	-	B	B
Monadelphous Group	-	-	-	D	D	D	-	-	-	-
Mondelez International Inc	-	-	-	B	B	C	C	C	D	C
Mondi PLC	B	B	A	B	B	B	A	A-	A-	A-
Moneta Money Bank AS	-	-	-	-	-	-	-	D	C	C
Mongolian Mining Corp.	-	-	-	-	-	-	-	D-	-	D-
Monks Investment Trust PLC	-	-	-	-	-	E	-	-	-	-
Monsanto Company	-	-	-	D	D	D	C	B	-	-
Montauk Holdings Ltd	-	-	-	-	-	-	-	-	-	D-
Moody's Corporation	-	-	-	-	-	-	D	C	D	D
Morgan Advanced Materials	C	C	A	A	B	B	A-	B	B	B
Morgan Sindall Group plc	-	D	B	B	B	B	A-	A-	A-	A-
Morgan Stanley	B	A	B	A	B	A-	A-	A-	B	A
Mori Building Co, Ltd.	-	-	-	-	-	B	B	-	-	B
Morinaga & Company Ltd	-	-	-	-	-	-	-	-	-	B
Morinaga Milk Industry Co., Ltd.	-	-	-	-	-	-	-	-	-	C
Morrison Supermarkets	-	B	B	B	A	C	B	B	-	-
Moscow Exchange MICEX-RTS	-	-	-	-	-	-	-	-	-	D
Mothercare	C	D	D	C	-	-	-	-	-	-
Motherson Sumi Systems	-	-	-	-	-	-	D-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Motorola Mobility	-	-	C	-	-	-	-	-	-	-
Motorola Solutions	-	E	C	B	B	B	B	C	C	C
Mouchel Group	C	D	-	-	-	-	-	-	-	-
Mowi ASA	-	-	-	-	-	-	-	-	C	A-
MRV Engenharia e Participações	-	-	-	-	-	-	C	A-	A-	B
MS&AD Insurance Group Holdings, Inc.	-	D	B	-	C	C	B	A	A	A
MSA Safety, Inc.	-	-	-	-	-	-	-	-	-	C
MSCI	-	-	-	-	-	-	-	-	-	B
MTN Group Management Services	C	D	C	D	C	C	C	C	C	C
MTR Corporation	B	C	C	C	B	C	C	C	C	B
MTU Aero Engines AG	-	-	-	-	-	D	C	D	D	D
Muangthai Capital Public Company Limited	-	-	-	-	-	-	-	-	-	D-
Munich Re	A	A-	C	A	-	-	-	-	-	C
Munters Group Ab	-	-	-	-	-	-	-	-	-	D-
Murata Mfg. Co.	-	B	B	-	B	B	B	A-	B	B
Murray & Roberts Holdings Limited	B	D	D	D	D	C	B	B	C	B-
MWV Energie AG	-	-	D	D	D	C	B	A-	A-	-
N Brown Group Plc	B	C	C	B	B	C	B	B	B	B
Nabtesco Corporation	-	C	B	B	B	A-	A	A	A	A
Nagase & Co., Ltd.	-	-	-	-	-	-	D	D	D	C
Nampak Ltd	D	B	B	A	A-	B	A-	A-	A-	B
Nan Ya Plastics	-	-	-	-	-	-	-	B	A-	A-
Nan Ya Printed Circuit Board	-	-	-	-	-	D	-	C	B	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Nankai Electric Railway Co., Ltd.	-	C	C	-	C	B	A-	B	B	B
Nanya Technology Corp	-	-	-	-	C	D	C	C	A-	A-
NASDAQ OMX Group, Inc.	-	-	-	D	-	E	-	-	-	-
Naspers	-	-	-	E	-	-	-	-	-	-
National Australia Bank	A	A	A	-	A	A-	A	A-	B	B
National Bank of Canada	-	-	D	B	D	E	C	D	D	C
National Bank Of Greece	-	C	-	-	-	-	D	D	D	C
National Express Group Plc	C	D	D	D	B	C	B	B	-	B
National Grid PLC	A	C	C	B	B	B	A	A	A	A
Natixis SA	-	E	D	-	D	E	D	D	D	B
Naturex	-	-	-	-	-	-	-	C-	-	-
Naturgy Energy Group SA	B	A	A	A	A	A-	A	A-	A	A-
NatWest Group plc	-	-	-	-	-	-	-	-	A-	-
Navient Corp	-	-	-	-	-	-	-	D	D	D
Navigant Consulting Inc	-	-	-	-	-	-	-	-	-	C
Navistar International Corporation	-	-	-	-	-	D	C	D	D	D
NCC	C	E	C	D	C	B	B	B	A-	A-
NCR Corporation	-	-	-	-	-	-	-	D	D	D
NEC Corporation	-	C	C	-	B	B	A-	B	A-	A
Nedbank Limited	A	A-	B	B	A-	A	A	A	A-	B
Nemak	-	-	-	-	-	-	-	D	D	C
Neopost	-	-	-	D	D	B	B	A-	B	B
Neste Oyj	C	C	C	C	B	C	A	A-	A	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Nestlé	A	A-	A	A	A-	A	A	A	A	A
NetApp Inc.	-	E	D	C	B	C	B	B	C	B-
Netaş Telekomünikasyon A.Ş.	-	-	-	-	D	D	D	D	D	C
Netcare Limited	C	B	B	B	B	C	B	B	B	B
NeuStar Inc	-	-	-	-	-	D	-	-	-	-
New Gold Inc.	-	-	-	E	D	D	C	-	-	-
New World Development	-	-	-	-	-	-	-	C	C	C
New Zealand Oil & Gas	-	-	-	-	-	E	-	-	-	-
Newcrest Mining	C	E	E	-	-	-	-	-	-	-
Newell Brands	-	-	-	-	-	-	-	-	D	D
Newell Rubbermaid Inc.	D	-	-	D	E	E	-	-	-	-
Newmont Mining Corporation	C	C	C	B	C	D	B	B	A-	B
News Corp	-	-	-	-	B	B	A-	A-	B	B
Nexans	-	-	-	-	D	D	C	B	A	A-
Nexen Inc.	-	-	C	-	-	-	-	-	-	-
Nexen Tire	-	-	-	-	D	D	-	-	-	-
Nexity	-	D	C	-	B	B	A-	B	A	A-
Next	B	C	B	B	B	D	-	B	B	B
Nextdc	-	-	-	-	-	-	-	-	-	D
NGK Insulators, Ltd.	-	C	B	-	-	C	B	B	B	A-
NGK Spark Plug Co., Ltd.	-	-	C	C	B	C	C	B	D	B
NH Foods Ltd.	-	-	-	D	C	D	C	C	C	B-
NH Hotel Group	-	C	B	C	A-	A	B	B	A-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NH Investment & Securities Co., Ltd.	-	-	-	-	-	-	D	D	D	D-
NIB Holdings Ltd	-	-	-	-	-	-	-	-	-	C
Nibe Industrier	-	-	-	-	-	C	B	C	-	-
Nichirei Corporation	-	-	-	-	C	C	A-	C	B	B
Nidec Corporation	-	C	-	C	-	-	D	-	D	D
Nielsen Holdings	-	-	-	-	-	-	D	B	C	C
Nifco Inc.	-	-	-	-	-	-	-	-	-	C
Nihon Kohden Corporation	-	-	-	-	D	D	D	C	B-	B-
Nike Inc.	-	-	D	D	C	D	C	B	C	B
Niko Resources Ltd.	-	-	-	-	-	-	D	-	-	-
Nikon Corporation	-	-	C	C	C	D	A-	B	A-	A
Nippon Express Co., Ltd.	-	-	-	-	C	D	C	C	B	B-
Nippon Kayaku Co., Ltd.	-	-	-	-	C	C	C	C	B-	B-
Nippon Light Metal Holdings Company, Ltd	-	-	-	-	-	-	C	C	C	C
Nippon Paint Holdings Co., Ltd.	-	C	C	C	-	-	-	-	-	-
Nippon Paper Industries Co Ltd	-	-	-	-	C	D	D	D	D	D
Nippon Sheet Glass Company, Ltd	-	-	D	-	B	B	B	B	B	B
Nippon Shinyaku Co., Ltd.	-	-	-	-	-	-	-	-	-	D
Nippon Shokubai Co., Ltd.	-	D	D	E	D	D	C	C	D	C
Nippon Steel Corporation	C	C	C	D	B	C	B	B	B	B
Nippon Suisan Kaisha Ltd	-	-	-	-	-	-	D-	D	D	D
Nippon Telegraph & Telephone Corporation (NTT)	-	-	E	-	A	B	A-	A-	B	B
Nippon Television Holdings	-	-	-	D	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Nippon Yusen Kaisha Line	-	B	A	A-	B	A-	A-	A-	A	A-
Nishimatsu Construction Co Ltd	-	-	-	-	-	-	-	-	-	A-
NiSource Inc.	C	D	-	D	C	E	D	C	C	C
Nissan Chemical Industries, Ltd.	-	-	-	-	-	-	D	C	B	B
Nissan Motor Co., Ltd.	C	C	C	A	A	A	A	A-	A-	A
Nissha Co., Ltd.	-	C	D	-	-	D	C	C	B	B
Nisshin Seifun Group Inc.	-	-	-	-	-	-	-	-	-	B
Nisshinbo Holdings Inc.	-	C	C	-	C	C	B	C	C	C
Nissin Foods Holdings Co., Ltd.	-	-	-	-	-	-	-	-	-	B
Nitto Denko Corporation	-	E	D	C	C	D	D	B	B	B
NKT Holding A/S	C	E	D	C	-	-	-	-	-	-
NMDC	-	-	-	-	-	-	-	C	D	D
NN Group NV	-	-	-	-	-	C	B	C	B	C
Nobia	-	E	D	D	D	D	C	C	C	C
Noble Energy, Inc.	C	D	C	C	C	C	C	C	C	-
Noble Group	-	B	B	A-	B	-	-	-	-	-
NOK Corporation	-	C	C	-	C	-	C	C	C	B
Nokia Group	A	A-	A	A-	A	A	A-	A-	A-	A-
Nokian Tyres	-	-	-	E	E	D	C	B	B-	B
Nolato AB	-	-	-	-	-	D	C	C	C	C
Nomura Holdings, Inc.	C	E	B	B	B	B	A-	A-	A-	A-
Nomura Real Estate Holdings, Inc.	-	-	-	-	-	-	-	-	-	B
Nomura Research Institute, Ltd.	-	-	-	-	-	B	A-	B	B	A

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Nordax Group	-	-	-	-	-	-	D-	D-	-	-
Nordea Bank Abp	-	-	-	-	-	-	-	-	B-	B
Nordex SE	-	-	-	-	-	E	C	C	D	C
Nordic Semiconductor ASA	-	-	E	D	C	C	B	C	B-	C
Nordnet AB	-	-	D	E	-	-	-	-	-	-
Nordstrom, Inc.	C	D	C	C	C	D	B	B	B	B
Norfolk Southern Corp.	C	B	B	B	B	A-	B	C	C	B
Noritz Corporation	-	-	-	-	-	-	-	-	C	B
Norma Group	-	-	-	-	-	E	-	-	-	C
Norsk Hydro	B	D	D	C	C	C	C	C	C	D
Northam Platinum Ltd	B	B	D	B	C	D	B	C	C	B
Northern Star Resources	-	-	-	-	-	-	-	D	-	-
Northern Trust	C	D	D	B	C	D	B	A-	C	-
Northgate Plc	-	-	-	-	-	E	-	-	-	-
Northrop Grumman Corp	C	C	A	A	A	A-	A-	A-	A-	A-
Northumbrian Water Group	B	B	B	-	-	-	-	-	-	-
Norway Royal Salmon	-	-	-	-	-	-	-	-	-	B
Norwegian Cruise Line Holdings Ltd	-	-	-	-	-	-	-	-	-	B-
Norwegian Property ASA	-	-	D	C	B	C	A-	A-	B	B
Novartis	B	A	B	B	B	B	A-	A-	A-	A-
Novatek Microelectronics Ltd	-	-	-	-	-	D	D	-	-	-
Novatek OAO	-	-	-	-	E	E	D	D-	-	D-
Novellus Systems	-	D	-	-	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Novion Property Group	-	A-	A	A-	A-	A-	-	-	-	-
Novo Nordisk A/S	A	B	B	B	B	B	A	A	A	A
Novozymes A/S	B	B	B	A-	A	A-	A	A-	A-	B
NRG Energy Inc	-	C	B	B	C	B	B	B	A-	A-
NSI NV	-	-	-	-	-	-	-	D-	-	-
NSK Ltd.	-	C	C	B	B	C	B	B	B	B
NTN Corporation	-	C	D	B	D	C	A-	A-	B	B
NTPC Ltd	-	-	-	-	-	-	-	-	-	D
NTT Data Corporation	-	B	B	B	B	B	A-	A-	A-	A-
NTT DoCoMo Inc.	-	D	D	-	B	C	B	A-	A-	B
NTT Urban Development Corporation	-	B	B	B	B	B	B	B	C	-
Nutrien Ltd.	-	-	-	-	-	-	-	-	-	D
Nvidia Corporation	D	D	C	B	C	C	A-	B	A-	A-
NXP Semiconductors	-	-	-	-	-	-	-	-	D	D
Nyrstar NV	-	-	D	D	-	D	C	C	D	D
Obayashi Corporation	-	B	B	-	B	B	A-	B	B-	A-
Obrascon Huarte Lain (OHL)	-	B	B	B	A-	A	A	A	A-	-
OC Oerlikon	-	-	-	-	-	-	D	-	-	-
Ocado Group	-	-	-	-	-	-	-	C	B	B
Occidental Petroleum Corporation	-	C	D	E	E	D	C	C	C	C
Oceana	-	-	B	B	B	B	A-	B	B	B
Odfjell SE	-	D	D	D	C	D	C	C	C	C
Odontoprev S/A	-	-	-	-	E	E	C-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Office Depot, Inc.	-	-	-	-	-	-	-	C	D	C
Office2Office PLC	-	-	-	-	D	E	-	-	-	-
OFS Brands	-	-	-	-	-	D	C	C	C	-
OGE Energy Corp.	-	-	-	-	-	E	C	C-	D	D
Oi S.A	-	-	E	-	D	D	B	C	C	C
Oil Search	-	B	D	D	D	D	C	C	C	C
Oji Holdings Corporation	-	B	B	-	C	C	B	B	B	B
Olam International	-	-	E	-	-	C	B	B-	C	C
Old Mutual Group	B	B	B	B	B	B	B	B	B	-
Olympus Corporation	-	C	C	A	A	B	A-	A-	B	A-
Omnia Holdings Ltd	-	-	-	-	-	C	B	B	B	C
Omnicom Group Inc.	-	E	D	D	E	-	-	-	D	D
Omron Corporation	-	D	B	-	B	C	B	B	B	A-
OMV AG	-	B	D	B	B	A-	A-	A-	A-	A-
ON Semiconductor	-	-	-	-	-	D	C	D	D	D
Oneok Inc.	-	-	-	-	-	E	D	D	D	D
Ono Pharmaceutical Co., Ltd.	-	-	-	-	C	C	B	A-	A	A
Ontex Group NV	-	-	-	-	-	-	C	C	C	B-
OP Financial Group	-	-	E	B	C	C	B	B	B	A-
Opera Software ASA	-	-	-	-	-	-	-	D-	-	-
Ophir Energy plc	-	-	-	-	-	-	C	C	D	D
Oracle Corporation	-	E	D	C	C	B	A	A	A	A-
Orange	B	E	A	B	A	B	B	A-	A-	A

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Orbia Advance Corporation	-	-	-	-	-	-	-	-	C	D
Orbis Corp	-	-	-	-	-	E	-	-	-	-
Orica	-	C	-	-	D	D	C	C	C	B
Oriental Land Co Ltd.	-	-	-	-	-	-	-	-	-	D-
Oriflame Cosmetics AB	-	-	-	C	A	B	B	B-	B	B
Origin Energy	-	C	C	B	C	D	B	C	D	B
Origin Enterprises PLC	-	-	-	-	-	-	-	-	D-	-
Oriola Oyj	-	-	-	-	-	-	-	D	C	B
Orion Oyj	D	D	-	-	-	-	-	-	-	D
ORIX Corporation	-	E	C	D	C	D	C	C	D	-
Orkla ASA	C	C	D	C	B	B	B	A-	B	A-
Ormat Technologies Inc	-	-	-	-	-	-	D	D	D	D
Orocobre	-	-	-	-	-	-	-	-	-	D
Orora	-	-	-	-	-	-	B	C	B-	B
Orpea	-	-	-	-	-	-	-	-	-	D-
Ørsted	-	-	-	-	-	-	B	C	B	A
Osaka Gas Co., Ltd.	-	B	C	B	B	B	A-	B	A-	A-
Osram Licht AG	-	-	-	-	-	-	-	-	-	B-
Össur hf.	-	-	-	-	-	-	D	D	-	-
Österreichische Post AG	-	-	B	A	B	B	B	A	A-	A
Otsuka Holdings Co., Ltd.	-	-	-	-	-	-	D	C	B	B
Outokumpu Oyj	B	B	B	A	B	B	B-	B	C	C
Outotec Oyj	B	C	B	-	-	-	-	-	-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Oversea-Chinese Banking Corporation	-	-	-	-	-	-	D-	D-	-	D-
Ovintiv Inc	-	-	-	-	-	-	-	-	B	-
Owens Corning	-	-	-	-	-	B	A	A	A	A
Owens-Illinois	-	-	-	-	D	D	C	C	B	B
Oxford Instruments Plc	-	-	-	-	D	C	C	-	-	-
OZ Minerals	-	C	D	D	-	-	D	D	-	-
Paccar Inc	-	-	-	-	B	A-	A-	A-	A	A
Pacific Basin Shipping Ltd.	-	-	-	-	D	-	-	-	-	-
Pacific Horizon Investment Trust	-	-	-	-	-	E	C	-	-	-
Pacific Industrial Services	-	C	B	C	-	-	-	-	-	-
Packaging Corporation Of America	-	-	-	-	-	-	-	-	-	C
Pact Group Holdings	-	-	-	-	-	E	-	-	-	-
Pagegroup	-	-	-	E	E	-	-	-	-	-
Palfinger AG	-	-	-	-	-	-	B	C	C	C
Pall Corporation	C	D	D	C	C	E	D	-	-	-
Panalpina Welttransport Holding AG	-	-	E	D	C	C	B	B	A-	A
Panasonic Corporation	A	B	A	A-	B	B	A-	A-	A-	A
PanAust	-	-	C	D	C	C	B	C	C	-
Pandox	-	-	-	-	-	-	-	C	B	B
Parex Resources Inc	-	-	-	-	-	-	-	-	C	C
Parexel	-	-	-	-	-	-	-	C	D	C
PARK24 Co., Ltd.	-	-	-	-	-	-	-	D-	-	-
Parker-Hannifin Corporation	D	D	C	B	B	C	B	B-	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Partners Group	-	-	E	E	-	-	-	D-	D-	D-
Partnership Assurance Group plc	-	-	-	-	-	D	D	-	-	-
Pattern SpA	-	-	-	-	-	-	-	-	-	D
Patterson Companies, Inc.	-	-	-	E	E	-	-	-	-	-
Peab AB	-	C	C	B	B	C	B	B-	B	B
Pearson	C	D	D	B	C	C	B	B	C	B
Pegasus Hava Taşımacılığı A.Ş.	-	-	-	-	-	B	B	B	B	B
Pegatron Corporation	-	-	-	-	C	D	C	C	D	C
Pendal Group Limited	-	-	-	-	-	-	D	D	D	C
Pengrowth Energy Corporation	-	-	-	B	C	D	C	-	-	-
Pennon Group	B	B	C	A-	B	C	B	B	C	B
People's Insurance Co Group of China Ltd	-	-	-	-	-	-	-	-	D-	D-
PepsiCo, Inc.	B	A-	B	B	B	B	B	A-	A-	A-
PerkinElmer, Inc.	C	D	D	D	D	E	D	D	D	D
Pernod Ricard	C	C	E	-	B	B	A-	B	A-	A
Perpetual Limited	-	D	E	-	E	D	C	D	C	D
Persimmon	C	C	D	C	D	D	D	C	C	C
Persol Holdings Co Ltd	-	-	-	-	-	-	D-	D-	-	-
Petra Diamonds Ltd	-	-	-	-	D	C	C	C	B	B
PetroChina Company Limited	-	-	-	-	-	-	-	-	D-	D-
Petrofac	-	E	D	B	B	C	B	C	C	B
Petróleo Brasileiro SA - Petrobras	C	C	C	-	C	C	A-	B	B	B
Petroleum Geo-Services ASA	C	D	D	D	C	D	C	C	-	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Peyto Exploration & Development Corp.	-	-	-	-	-	-	-	C	-	-
Pfizer Inc.	B	B	A	B	B	B	B	B	A-	B
PG&E Corporation	A	B	B	B	B	A-	A	A-	B	B
PGS ASA	-	-	-	-	-	-	-	-	C	-
Pharos Energy plc	-	-	-	-	-	-	-	-	D	-
Philip Morris International	B	B	A	B	A	A	A	A	A	A
Phoenix IT Group	-	-	-	-	-	E	-	-	-	-
PhosAgro OAO	-	-	-	-	-	-	-	-	-	C
Piaggio & C SpA	-	-	-	-	-	B	B	A-	C	B
Pick 'n Pay Stores Ltd	B	A-	B	A	A	B	A	B	B	A-
Pierre & Vacances Center Parcs Group	-	-	-	-	-	-	-	D	C	D
Pınar Entegre Et ve Un Sanayi A.Ş.	-	-	-	-	-	-	-	D	B	B
Pınar Süt Mamulleri Sanayi A.Ş.	-	-	-	-	-	B	A-	A-	B	B
Pinnacle Foods Group	-	-	-	-	-	-	B	B	B	-
Pinnacle West Capital Corporation	C	-	-	-	D	D	B	A-	B	A
Pioneer Corporation	-	C	B	-	-	C	B	-	C	-
Pioneer Foods	-	-	D	-	D	C	B	C	B	B
Piraeus Bank	-	-	-	-	C	C	B	B	B	B
Piramal Enterprises	-	-	-	-	-	-	D	-	D	D
Pirelli	-	-	-	-	-	-	-	A-	A	A
Pitney Bowes Inc.	D	E	D	D	B	A	A-	A-	C	B
PJSC Lukoil	-	-	-	-	-	-	-	-	D	-
PJSC Gazprom	-	D	E	C	C	D	C	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Platinum Asset Management	-	-	-	-	-	E	C	C	D	D
PLDT Inc	-	-	-	-	D	-	C	-	-	-
Plum Creek Timber Co. Inc.	-	-	B	-	-	-	-	-	-	-
PNC Financial Services Group, Inc.	B	B	C	B	B	B	A-	A-	C	B
Pola Orbis Holdings Inc.	-	-	-	-	-	-	-	D	B	A-
Polarcus	-	-	-	-	D	D	-	-	-	-
Polisan Holding A.Ş.	-	-	-	-	-	-	-	C	D	D
Polymer Group, Inc	-	-	E	-	-	-	-	-	-	-
Polymetal	-	-	-	-	-	E	C	D	C	D
PolyOne	-	-	-	-	-	-	D	D	D	B-
Polyus PJSC	-	-	-	-	-	-	-	-	-	D
Poongsan Corporation	-	-	-	-	-	C	C	-	-	-
Porr AG	-	-	-	-	-	-	-	D	B	B
Porsche AG	-	-	C	-	-	-	-	-	-	-
Porto Seguro S.A.	-	-	-	-	D	D	D	D	-	-
POSCO	A	A-	B	B	B	B	A-	A-	B	A-
Postal Savings Bank Of China (H)	-	-	-	-	-	-	-	-	-	D
PostNL	-	-	-	-	C	B	A-	B	A-	A-
Pou Chen Corp.	-	-	-	-	-	E	D	-	D	B-
Power Assets Holdings Limited	-	A	B	B	-	-	-	-	-	-
Power Corporation of Canada	-	-	D	B	B	C	B	A-	A	A-
Power Financial Corporation	-	-	D	C	B	C	B	A-	A	A-
Powertech Technology Inc	-	-	-	-	-	-	D	A-	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Pöyry Plc	-	-	E	-	-	-	-	-	-	-
PPC Ltd	C	C	D	C	B	C	C	B	D	-
PPG Industries, Inc.	C	D	C	D	D	D	D	D	D	D
PPL Corporation	-	-	-	-	-	-	-	-	-	C
Prairiesky Royalty Ltd	-	-	-	-	-	-	-	-	-	B
Praxair, Inc.	A	A-	A-	B	A-	A-	A	A-	-	-
Precinct Properties New Zealand	-	-	-	-	D	E	-	-	-	-
Premier Foods	B	-	-	C	-	-	-	-	-	-
Premier Oil	C	D	E	D	D	D	B	C	D	B
Principal Financial Group, Inc.	-	C	C	A	A	A	A-	A-	A-	A-
Procter & Gamble Company	-	-	D	-	D	D	C	C	B	A-
Programmable Solutions Group (PSG)	-	-	-	D	B	A-	-	-	-	-
Progressive Waste Solutions Ltd.	-	-	C	B	C	C	C	-	-	-
Prologis	B	B	D	B	C	C	B	C	A-	A-
Prosafe	-	-	D	D	C	D	C	C	C	-
ProSiebenSat.1 Media SE	-	-	-	-	-	-	C	C	C	C
Provident Financial plc	C	B	B	D	C	D	C	C	C	C
Proximus	B	B	B	-	A	A	A	A	B	A-
Prudential Financial, Inc.	C	-	-	C	C	D	C	C	B	B
Prudential plc	C	E	D	D	B	B	B	A-	B	B
Prysmian SpA	-	-	-	-	D	B	B	B	B	B
PSI Software AG	-	-	-	-	E	E	C	C-	D	C
PSP Swiss Property AG	-	-	B	B	B	C	A-	A-	C	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
PT Portugal SGPS S.A.	B	C	C	A	B	B	-	-	-	-
PTT	-	-	D	B	C	C	B	B	C	C
PTT Exploration & Production Public Company Limited	-	D	D	C	A-	A	A-	A-	A-	A-
PTT Global Chemical	-	-	-	B	B	A-	A-	A-	B	A-
Public Power Corporation SA	-	-	-	-	-	-	D-	D-	-	-
Public Service Enterprise Group Inc.	A	C	-	-	-	-	-	D	-	-
Publicis Groupe SA	-	-	-	E	-	D	C	C	C	C
Pulmuone Co., Ltd.	-	-	-	-	-	-	-	A-	C	B
Puma SE	B	B	D	B	C	C	C	C	B	B
PVH Corp	-	-	-	-	-	-	B	C	C	B
PZ Cussons	C	-	D	C	C	-	-	C	B-	C
Qantas Airways	-	B	B	B	B	B	A	-	-	-
Qatar National Bank	-	-	-	-	-	-	-	D	D	D
QBE Insurance Group	D	-	E	E	E	-	D	D	D	B
QGEP Participacoes SA	-	-	-	-	-	-	-	C	-	-
QinetiQ Group	C	B	C	C	C	C	B-	C	C	C
Qisda	-	-	-	-	-	B	A-	A-	A-	B
Qorvo	-	-	-	-	-	-	-	C-	-	-
Qualcomm Inc.	C	C	D	D	D	D	B	B	A-	B
Quanta Computer	-	D	E	D	-	C	B	C	B-	C
Quebecor Inc.	-	-	E	-	D	D	C	C	D	C
Quest Diagnostics Incorporated	-	-	D	D	C	D	C	B-	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Quilter	-	-	-	-	-	-	-	-	-	B-
Quintain Estates & Development PLC	-	-	-	-	C	C	-	-	-	-
Raia Drogasil SA	-	-	-	-	-	-	D-	D-	D-	D-
Raiffeisen Bank International AG	-	C	C	A	A	A	A	A-	A-	A-
Raisio Oyj	-	-	-	-	-	-	C-	D	C	-
Rakon	-	-	E	-	-	-	-	-	-	-
Rakuten, Inc.	-	-	-	-	-	-	-	-	D	B
Ramirent	-	-	-	-	-	-	D-	-	D	D
Randstad Holding nv	C	E	-	-	-	-	B	B-	D	B
Range Resources Corp.	-	-	-	-	-	-	D	-	-	-
Rathbone Brothers plc	C	D	D	E	D	E	C	D	C	B-
Ratos AB	-	-	-	-	-	-	D	D	D	-
Raubex Group Limited	-	-	-	-	-	E	C	D	D	C
Rautaruukki Oyj	C	D	C	C	D	-	-	-	-	-
Raytheon Company	B	C	B	A	B	A	A-	A-	A-	A-
RCL Foods Ltd	-	-	-	-	B	B	A	A-	A-	B
Reach	C	D	-	C	D	E	C	C	C	C
REC Silicon	-	-	B	B	-	-	-	-	-	-
Recipharm Ab	-	-	-	-	-	-	C-	C	C	B-
Reckitt Benckiser	A	B	A	B	A-	A-	A-	A-	A-	A-
Recruit Holdings Co., Ltd.	-	-	-	-	-	-	-	-	-	B-
Recylex SA	-	-	-	-	-	-	D	D	-	-
Red Eléctrica S.A.U	C	C	C	C	B	B	A	A	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Redecard S/A	-	-	E	-	-	-	-	-	-	-
Redefine International Plc	-	-	-	-	-	-	-	D-	-	-
Redefine Properties Ltd	-	-	-	D	A	B	A-	B	B	B
Regency Centers Corporation	-	-	-	-	-	D	-	-	-	-
Regeneron Pharmaceuticals, Inc.	-	-	-	-	-	E	B	B	C	B
Regions Financial Corporation	-	-	-	-	-	-	-	-	-	C
RELX Group Plc	B	A-	B	A	A	B	A	A-	A	A-
Remgro	B	A-	B	A	B	A-	A	A-	A-	B
Remy Cointreau	-	-	-	-	D	D	C	C	C	C
REN - Redes Energéticas Nacionais	-	C	C	C	B	D	B	B	C	C
RenaissanceRe Holdings Ltd	-	-	-	-	-	-	D	-	-	-
Renault	A	B	B	B	A	A-	A	A-	A-	A-
Renesas Electronics Corporation	-	-	-	D	D	D	C	-	-	-
Renewi	-	E	E	D	-	E	C	D	D	D
Rengo Co., Ltd.	-	D	C	B	C	C	C	B	B-	B
Renishaw	C	-	-	E	C	C	B	-	C	C
Rentokil Initial	C	D	D	C	C	-	C	C	C	C
Reply S.p.A.	-	-	-	-	C	B	C	C	B	C
Repsol	A	B	A-	B	B	B	A-	A-	B	A-
Republic Services, Inc.	-	-	-	-	C	A-	A	B	B	A
Resolute Forest Products Inc.	-	-	-	C	C	C	B	C	B	B
Resona Holdings, Inc.	-	D	D	-	D	D	-	-	B	B
Restaurant Group	-	-	-	-	-	-	D-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Reunert	-	-	D	D	C	D	C	C	C	C
Rexel	-	-	D	B	C	B	B	B	A	A
RHI Magnesita	-	-	-	-	-	-	-	-	-	C
Ricardo Plc	-	-	-	-	D	D	C	C	C	-
Ricoh Co., Ltd.	-	C	B	B	A-	B	A-	A	A-	A-
Ricoh Leasing Co., Ltd.	-	-	-	-	-	B	B	A-	B	A
Rieter Holding AG	-	-	-	D	-	-	-	-	-	-
Rightmove	-	-	-	-	-	E	-	C-	D	-
Rinnai Corporation	-	-	C	C	B	D	C	D	-	-
Rio Paranapanema Energia SA	-	-	-	-	-	C	B	C	C	C
Rio Tinto	B	B	C	B	B	B	B	B	C	C
Ritchie Bros. Auctioneers Incorporated	-	-	-	-	D	C	-	-	D-	D-
Robert Half International Inc.	-	-	-	-	-	-	D-	D	D	D
Robert Walters	-	-	-	-	-	D	C	C	D	-
Robert Wiseman Dairies	C	-	-	-	-	-	-	-	-	-
Roc Oil Company Ltd	-	C	-	-	-	-	-	-	-	-
Roche Holding AG	-	C	B	B	A-	A	A	A-	A-	-
Rockwell Automation	C	C	C	C	D	D	B-	D	D	D
Rockwell Collins, Inc.	B	C	D	C	D	C	C	C	-	-
Rockwool International A/S	-	A-	B	B	B	B	B	A-	B	B
Rofin-Sinar Technologies, Inc.	-	-	E	-	-	-	-	-	-	-
Rogers Communications Inc.	-	D	D	-	C	C	B	C	C	D
Rohm Co., Ltd.	-	-	C	-	B	B	B	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Rolls-Royce	A	B	B	B	B	B	A-	A-	B	-
Rosneft Oil Company	-	-	-	-	-	-	-	-	D	B
Rostelecom	-	-	-	-	-	-	D	D	D	C
Rothschild & Co	-	-	-	-	-	-	-	-	-	B
Rotork PLC	-	D	D	E	D	D	C	C	D	B-
Royal Bafokeng Platinum Ltd	-	-	-	-	-	-	-	B	B	B
Royal BAM Group nv	-	-	B	B	A	A	A	A-	A-	A
Royal Bank of Canada	-	-	-	-	-	-	-	-	C	B
Royal Boskalis Westminster	-	-	E	D	D	E	C	D	D	D
Royal Caribbean Cruises Ltd	C	C	C	C	C	C	C	C	C	B
Royal Dutch Shell	A	A-	B	-	B	B	A-	B	C	B
Royal Gold, Inc.	-	-	-	-	-	-	D	-	-	-
Royal Imtech N.V.	-	-	-	-	E	D	-	-	-	-
Royal Mail Group	-	-	-	-	A-	B	B	B	A-	B
Royal Wessanen NV	-	-	C	-	C	D	C	B	B	B
RPC Group Plc	-	-	E	D	B	C	C	B	B	B
RPS Group Plc	-	D	C	C	C	C	C	C	C	-
RSA Insurance Group	-	D	C	B	B	D	C	C	C	B
Rumo	-	-	-	-	-	-	-	-	-	D
RusHydro JSC	-	-	-	-	-	E	-	D	D	D
Russel Metals Inc.	-	-	E	D	E	E	-	-	-	-
RWE AG	B	B	B	B	A	C	B	B	-	B
Ryder System, Inc.	C	B	C	B	B	B	A-	A-	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
S&P Global	C	D	B	B	B	B	B	C	A-	A-
Saab	B	B	B	B	B	B	A-	A-	C	A-
Sabancı Holding A.Ş	-	-	-	-	-	C	B	C	-	C
SABIC	-	-	-	-	-	-	-	-	-	B
SABMiller	B	C	C	B	A	A	A-	-	-	-
Sacyr	-	-	-	-	-	-	-	-	-	C
Safeway Inc.	-	-	B	-	-	-	-	-	-	-
Safran	-	C	D	D	D	E	C	C	C	C
SAFT	-	-	-	-	D	E	C	-	-	-
Sage Group	-	D	D	D	D	E	B	C	B-	B
SAIC Inc	-	-	-	C	-	-	-	-	-	-
Saint-Gobain	B	A-	B	B	B	B	A-	A-	A	A
Saipem	-	-	E	C	C	B	C	C	B	B
Salesforce.com, Inc.	-	B	C	C	C	B	A-	B	A	A
Salini Impregilo S.p.A.	-	-	-	-	-	B	B	A	B	A-
Salmar ASA	B	B	-	-	-	-	-	B	B	B
Salvatore Ferragamo SpA	-	-	-	-	-	-	-	B	B	B
Salzgitter AG	-	-	-	-	-	-	B	B	A-	A-
Samsung C&T	-	-	-	-	A	A	A	A	B	A-
Samsung Electro-Mechanics Co., Ltd.	-	-	A	-	A	A	A-	A	A-	A-
Samsung Electronics	A	A	B	A	A	A	A	A	A-	A-
Samsung Engineering	-	-	B	-	A-	A	A	A	A-	A
Samsung Fire & Marine Insurance	-	-	C	-	A	B	A-	A-	C	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Samsung Heavy Industries Co Ltd	-	-	B	-	B	B	B	B	D	D
Samsung Life Insurance	-	-	-	-	D	D	-	-	-	-
Samsung SDI	-	-	A	-	A	B	A-	A-	B	A-
Samsung SDS	-	-	-	-	-	-	B	A-	B	-
Samsung Securities	-	-	-	-	E	D	C	C	-	-
Sanderson Farms Inc	-	-	-	-	-	-	-	D	-	-
Sandfire Resources NL	-	-	-	-	-	E	C	D	D	-
Sandvik AB	C	E	E	C	B	D	C	C	-	-
Sanlam	B	B	B	B	A	B	A-	B	B	B
Sanofi	C	D	B	-	B	B	A-	A-	A-	B
Sanoma	-	-	-	-	-	-	D	D	D	D
Santam Ltd	C	B	B	C	C	D	C	-	-	-
Santen Pharmaceutical Co., Ltd.	-	-	-	-	-	-	C	C	C	C
Santos	-	B	C	C	B	C	B	-	-	-
Sanyo Electric Co., Ltd.	-	C	-	-	-	-	-	-	-	-
SAP SE	B	A	B	-	A	B	A-	A-	B	B
Sappi	B	C	C	C	C	C	B	B-	D	D
Sapporo Holdings Limited	-	C	B	-	B	B	B	C	C	B
Saputo Inc.	-	-	D	D	D	E	C-	C-	D	C
Saracen Mineral Holdings	-	-	-	-	-	-	-	-	C	-
SAS	-	B	D	-	B	B	A-	B	C	C
Sasol Limited	B	C	C	B	A-	B	A-	B	B	B
Saudi Telecom Company-STC	-	-	-	-	-	-	-	-	-	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
SAVE - Aeroporto di Venezia Marco Polo S.p.A.	-	-	-	-	-	C	C	-	-	-
Savills	-	C	D	C	C	C	-	-	-	-
Sawai Pharmaceutical Co., Ltd.	-	-	-	-	-	-	C	C	D	C
SBI Holdings, Inc.	-	-	-	-	-	-	D	D	-	D
SBM Offshore	-	-	-	-	D	E	C	-	B	C
SCA	-	B	B	B	B	A-	A	A-	-	-
Scandic Hotels Group	-	-	-	-	-	-	B	B	A-	A-
Scania	C	D	C	D	C	-	-	-	-	-
Scatec Solar	-	-	-	-	-	-	-	-	-	B
Scaw South Africa (pty) Ltd	-	-	-	-	-	E	D	-	-	-
Scentre Group	-	-	-	-	-	C	B	C	B	B
Schaeffler	-	-	-	-	-	-	D	D	D	B-
Schibsted ASA	D	D	D	D	D	D	C	C	C	B-
Schindler Holding AG	-	-	-	-	-	-	C	B	B	B
Schlumberger Limited	C	B	C	C	C	C	B	-	D	B
Schmolz+Bickenbach AG	-	-	-	-	-	-	D	-	D-	D
Schneider Electric	B	A	A	A	A	A	A	A	A	A
Schnitzer Steel Industries, Inc.	-	-	-	-	-	-	-	C-	C	B
Schroders	B	D	B	B	B	D	B	C	C	B
Scor SE	-	-	-	-	-	-	-	C	D	C
SCREEN Holdings CO., Ltd.	-	C	D	C	C	C	C	C	B	B
SCSK Corporation	-	-	-	-	-	-	C	B-	C	C
SDL Plc	-	-	-	-	-	-	C	C	C	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Seadrill Management Ltd	-	-	E	D	D	D	C	C	B-	B
Seagate Technology LLC	-	-	-	-	C	C	B	B	A-	A-
Sealed Air Corp.	-	D	B	D	A-	A	A	A-	A-	A-
Sears Holdings Corporation	C	D	D	-	-	-	D	D	D	-
Secom Co., Ltd.	-	D	C	-	B	B	A	A-	B	A-
Securitas AB	-	C	D	C	C	D	C	C	C	C
Sega Sammy Holdings Inc.	-	-	-	-	-	E	D	D	D-	C
Segro	-	C	D	D	C	C	A-	A-	A-	A-
Seiko Epson Corporation	-	-	-	-	-	D	B	B	C	B
Şekerbank T.A.Ş	-	-	-	-	D	D	B	B	B	B
Sekisui Chemical Co., Ltd.	-	C	D	A	A	B	B	A-	A	A
Sekisui House, Ltd.	-	D	D	-	C	D	B	A-	A	A
SembCorp Industries	-	-	-	-	-	-	-	C-	C	B-
Semiconductor Manufacturing International Corp	-	-	-	-	-	-	-	C	C	C
Sempra Energy	C	A-	B	B	A-	A-	A-	A-	B	A-
Senior Plc	-	-	E	C	C	A	B	A-	B	A-
Sensata Technologies Holding NV	-	-	-	-	-	-	-	D	D	C-
Serco Group	B	A	B	C	B	B	B	B	C	C
ServiceNow Inc	-	-	-	-	-	-	-	-	D-	D
Ses	C	E	E	E	E	E	D	D	D	D
Seven & I Holdings Co., Ltd.	C	C	C	-	B	C	A-	A-	C	A-
Seven Bank, Ltd.	-	-	-	C	C	D	D	D	-	-
Seven Generations Energy	-	-	-	-	-	-	B	C	B	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Severfield	-	-	-	-	E	-	B-	C	B	B
Severn Trent	B	C	B	B	B	B	B	B	C	B
SeverStal PAO	-	-	-	-	-	-	-	-	-	D
SGS SA	B	D	D	A	A	B	A	B	B	A
Shaftesbury	C	B	C	B	B	C	B	C	C	B
Shanghai Electric Group Co Ltd	-	-	-	-	-	-	-	D-	D-	-
Shangri-La Asia	-	-	-	D	C	D	C	D	D	C
Sharp Corporation	-	B	B	-	C	C	B	B-	C	C
ShawCor Ltd.	-	-	-	D	D	-	C	C	D	C
Sherwin-Williams Company	C	D	D	C	C	D	C	C	D	D
SHI International Corp.	-	-	-	-	-	-	-	-	D	-
Shiga Bank, Ltd.	-	-	-	-	D	E	D	-	D	-
Shikoku Electric Power Co., Inc.	-	-	-	-	-	-	-	-	-	B
Shimadzu Corporation	-	D	D	-	D	D	C	C	D	C
Shimizu Corporation	-	A	A	A	A	A	B	A-	B	A-
Shin-Etsu Chemical Co., Ltd.	-	-	-	-	B	B	B	B	C	C
Shinhan Financial Group	B	C	C	-	A	A	A	A	A	A
Shionogi & Co., Ltd.	-	D	-	-	-	-	-	D	C	A-
Shire	C	D	D	C	B	B	B	A-	A-	B
Shiseido Co., Ltd.	-	C	C	-	A	B	A-	A-	B	A-
Shopify Inc	-	-	-	-	-	-	-	D	D	D
Shoprite Holdings Ltd	-	-	E	-	C	C	B	C	B	B
Showa Denko K.K.	-	D	E	-	B	C	B	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Showa Shell Sekiyu K. K.	-	-	-	-	-	E	D	C	C	-
Shree Cement	-	-	-	-	-	-	B	B	B	B
Siam Commercial Bank PCL	-	-	-	-	-	-	-	C	B	B
SIAS	-	-	-	-	-	-	-	-	-	B
Sibanye Stillwater	-	-	-	-	-	-	-	-	A-	-
Siemens AG	A	A-	A-	A-	A	A	A	A-	A	A-
Siemens Gamesa Renewable Energy SA	-	-	-	D	C	C	C	C	C	C
SIG	-	C	C	D	B	C	B	B	C	C
Sigma-Aldrich Corporation	C	D	C	B	A-	B	-	-	-	-
Signify NV	-	-	-	-	-	-	-	A	A	A
Sika Group AG	-	-	E	D	B	C	B	C	D	C
Siltronic AG	-	-	-	-	-	-	-	-	C	B
SimCorp A/S	-	-	-	-	-	-	D-	-	-	-
Sime Darby Bhd	-	-	D	D	-	C	D	D	-	-
Sime Darby Plantation	-	-	-	-	-	-	-	-	-	C
Sime Darby Property Berhad	-	-	-	-	-	-	-	-	-	C
Simmtech Co., Ltd.	-	-	-	-	-	D	C	-	-	-
Simon Property Group	B	A-	B	B	A	A	A-	A-	A-	B
Simplo Technology Co Ltd	-	-	-	-	-	-	-	-	D	-
Sims Metal Management	-	C	C	B	C	D	C	C	D	C
Singapore Airlines	-	E	-	E	E	E	D	C	D	B-
Singapore Technologies Engineering	-	-	-	-	C	C	C	C	B	-
SingTel	-	E	-	C	B	C	B	A-	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
SK Holdings	-	-	-	A	B	B	B	B	D	D
SK Hynix	-	-	A	-	A	A-	A-	A-	A-	A-
SK Telecom	-	-	B	-	B	B	A-	A-	C	B
Skandinaviska Enskilda Banken AB (SEB AB)	-	A-	B	B	B	B	A-	B	C	C
Skanska AB	B	C	C	B	B	B	A	A-	A-	A-
SKF	B	B	B	C	B	C	B	-	-	-
Sky Network Television	-	D	D	-	-	-	-	-	-	-
Sky plc	B	B	B	A	A-	A	A	A	B	-
SL Green Realty Corp.	-	-	-	-	-	-	-	-	B	A-
SM Investments	-	-	-	-	-	-	D	D	D	D
SM Prime Hldgs	-	-	-	-	-	-	-	D	D	D
SMC Corporation	-	-	-	-	-	-	-	-	-	D-
Smith & Nephew	-	C	C	B	B	C	A-	B	B	B-
Smithfield Foods, Inc.	-	-	-	-	-	D	-	C	D	C
Smiths Group	-	-	-	-	C	D	D	C	A-	B
Smurfit Kappa Group PLC	-	-	D	-	C	D	B	C	B	B
Snam S.P.A	C	D	C	-	A-	B	A	A	A-	A-
Snap-On Inc	-	-	-	E	E	E	C-	D	D	D
SNC-Lavalin Group Inc.	-	-	D	D	C	C	C	C	C	C
Société Générale	C	D	C	B	A-	B	B	A-	C	C
SOCO International Plc	-	-	-	-	C	D	C	C	-	C
Sodexo	-	D	C	-	B	C	A-	B	C	B
SoftBank Group Corp	-	-	-	-	-	-	-	C	-	D

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sohgo Security Services Co., Ltd.	-	-	-	-	-	-	D-	D	D	C
S-Oil Corp	-	-	-	-	A	A-	A-	-	-	-
Sojitz Corporation	-	D	C	-	B	D	B	A-	B	A-
Solar AS	-	D	E	D	E	E	-	D	D	C
SolarCity Corp	-	-	-	-	-	-	D-	-	-	-
SolarWorld AG	-	-	D	B	-	B	B	-	-	-
Solstad Offshore	-	-	-	-	A	-	-	-	-	-
Solvay S.A.	-	B	B	B	B	C	B	B	D	C
Sompo Holdings, Inc	-	C	B	C	B	B	A	A	A	A
Sonae	-	B	-	A	A	A-	A-	-	-	A-
Sonaecom SGPS SA	-	B	B	B	-	-	-	-	-	-
Sonic Healthcare	-	-	-	-	-	-	D-	-	-	-
Sonoco Products Company	-	-	-	-	-	C	C	C	D	B
Sonova Holding AG	-	-	D	E	D	D	B	B	A-	A-
Sony Corporation	B	A	B	A	A-	A	A	A	A	A
Sopra Group	-	E	-	-	-	-	-	-	-	-
Sopra Steria Group	-	-	-	-	-	B	A-	A	A	A
South32	-	-	-	-	-	-	B	C	D	-
Southwest Airlines Co.	C	-	D	B	B	C	C	C	C	C
Spansion Inc.	-	-	-	-	-	D	-	-	-	-
Spark Infrastructure Group	-	-	-	-	E	E	-	C	D	D
Spark New Zealand	-	-	-	D	D	E	C	C	B	B
Spectra Energy Corp	-	-	-	A	A	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Spectris	-	D	E	C	B	B	-	-	C	C
Spectrum Brands Inc.	-	-	-	-	-	-	-	-	C	C
Speedy Hire Plc	-	-	-	C	-	E	D	D	D	-
Spin Master Ltd	-	-	-	-	-	-	-	C-	D	C
Spirax-Sarco Engineering	C	D	C	C	D	C	C	C	B	B
Spire Healthcare	-	-	-	-	-	D	B	C	B	B
Spirent Communications	-	-	-	D	D	C	A-	B	C	B
Sponda Plc	-	-	-	B	B	A-	A-	A-	-	-
Sprint Corporation	-	-	-	A	A	A	B	B	-	C
SSAB	C	C	-	-	-	-	D	C	C	C
SSE	-	B	B	B	A	B	A-	B	A-	A-
St Barbara	-	-	-	-	-	-	-	-	-	D
St. Galler Kantonalbank	-	-	-	D	E	-	-	-	-	-
St. James Place	-	D	E	E	C	C	B	B	-	B
St. Modwen Properties	-	-	-	-	D	E	-	-	-	-
Stagecoach Group	B	B	C	C	C	C	C	C	C	-
Standard Bank Group	B	C	D	C	A	B	B	B	B-	B-
Standard Chartered	B	B	B	B	A	A	A-	B	C	C
Standard Life Aberdeen	B	B	C	B	B	B	B	C	C	C
Stanley Black & Decker, Inc.	C	D	B	A	A	A	A	A-	A	A
Stanley Electric Co., Ltd.	-	-	-	-	-	-	-	D-	-	-
Stantec Inc.	-	-	C	C	B	C	C	C	A-	A-
Starbucks Corporation	C	C	B	C	B	C	B	B	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
StarHub	-	-	-	-	-	D	C-	D	D	C
State Bank of India	-	-	-	-	-	-	D	D	C	C
State Street Corporation	B	B	C	C	C	A	B	B	C	B
Steadfast Group	-	-	-	-	-	-	D-	-	-	-
Steelcase	-	-	-	-	-	D	B-	B-	C	C
Steinhoff International Holdings	-	-	D	-	C	C	C	-	-	-
Stella-Jones Inc	-	-	-	-	E	E	-	C	C	C
Sthree Plc	-	-	-	-	E	E	B	B	B	B
STMicroelectronics International NV	-	C	B	B	B	B	B	A-	C	B
Stobart Group Ltd	-	-	-	D	D	D	-	-	-	-
Stockland	-	B	B	B	B	B	A	A	A	A
Stockmann Oyj	-	E	B	C	B	B	B	B	B	B
Stora Enso Oyj	A	B	B	B	B	B	A	A-	A	A
Storebrand ASA	-	B	B	B	B	B	B	B	A-	A-
Strabag SE	-	-	D	-	-	-	-	-	-	-
Straumann Holding AG	-	-	E	E	E	E	C	C	C	C
Stryker Corporation	-	-	-	E	E	E	D	C	B	B
Subaru Corporation	-	-	E	-	-	-	A-	B	-	B
Subsea 7	-	-	-	-	-	-	C	C	C	C
Suez	B	B	C	B	B	B	A	A	A	A
Sul América S/A	-	-	-	-	-	-	-	C	C	C
Sulzer AG	-	-	D	C	E	D	C	-	-	-
Sumco Corporation	-	-	-	-	-	-	D-	D-	-	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sumitomo Bakelite Company Limited	-	-	-	-	-	-	-	-	-	B
Sumitomo Chemical Co., Ltd.	-	D	B	B	B	B	A-	B	A	A
Sumitomo Corporation	-	D	C	A-	B	B	A-	B	B	B
Sumitomo Dainippon Pharma Co., Ltd.	-	-	D	-	D	C	C	C	C	B
Sumitomo Electric Industries, Ltd.	-	C	C	C	B	C	C	B	B	B
Sumitomo Forestry Co., Ltd.	-	C	C	-	B	B	A	A	A	A
Sumitomo Heavy Industries. Ltd.	-	-	C	B	B	C	B	C	B-	B
Sumitomo Metal Mining Co., Ltd.	-	E	E	D	B	B	A-	B	B	B
Sumitomo Mitsui Financial Group	-	-	C	-	B	D	B	C	C	D
Sumitomo Mitsui Trust Holdings, Inc.	-	-	B	-	C	C	B	B	C	C
Sumitomo Osaka Cement Co., Ltd.	-	-	-	-	-	-	-	D-	D	D
Sumitomo Rubber Industries, Ltd.	-	C	D	B	B	C	B	C	C	B
Sun International Ltd	-	-	E	D	B	C	A-	C	B	B
Sun Life Financial Inc.	-	-	B	C	D	D	C	C	C	C
Sun Messe Co., Ltd.	-	-	-	-	-	-	C	D	C	C
Suncor Energy Inc.	B	A-	B	B	B	B	B	B	B	B
Suncorp Group	-	-	D	C	C	D	C	C	C	B-
SunPower Corporation	-	-	-	-	-	-	A-	-	-	-
Sunrise Communications Group	-	-	-	-	-	-	-	-	-	D
Suntory Beverage & Food	-	-	-	-	A	A	A-	A-	A-	A
Super Retail Group	-	-	-	-	-	C	B	C	C	C
Superdry	-	-	-	-	E	E	C-	C	C	C
SuperValu, Inc.	D	C	B	-	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Suzuki Motor Corporation	-	-	-	-	-	C	B	B	C	B
Svenska Handelsbanken	-	C	C	B	B	C	B	B	B-	B-
Swedbank	C	C	C	B	C	B	B	B	B	B
Swedish Match	-	E	E	D	D	E	C	D	C	B-
Swire Pacific	-	E	B	-	C	B	B	B	C	B
Swiss Life Holding	-	-	C	C	C	D	B	C	B-	B-
Swiss Re	A	A	B	A	B	B	A-	B	C	A-
Swisscom	-	B	B	A	A-	A	A	A	A-	B
Symphony Ltd	-	-	-	-	-	-	-	D-	-	-
Symrise AG	-	-	B	B	B	A	A	A	A-	A
Synergy Health	C	C	E	D	C	E	-	-	-	-
Syngenta AG	B	B	B	B	A	B	B	B	C	C
Synlait Milk Ltd	-	-	-	-	-	-	-	-	-	D
Synopsys, Inc.	-	-	-	-	-	-	-	-	-	C
Synthomer plc	-	-	-	-	D	C	C	C	D	B-
Synthos S.A.	-	-	-	-	-	-	-	D	-	-
Sysco Corporation	-	-	-	C	D	D	C	C	C	B
Systemax Corporation	-	-	D	D	D	E	C	C	C	B
Systemair	-	-	-	-	-	-	D	-	-	-
T Mobile USA inc	-	-	-	-	-	-	C	C	C	B
T&D Holdings, Inc.	-	-	D	-	C	E	C	B	B	B-
T.İş Bankası A.Ş	-	-	-	-	-	-	-	-	-	C
T. Rowe Price Associates, Inc.	C	D	D	C	C	D	B	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
T.Garanti Bankası A.Ş.	-	C	-	C	A-	A	A	A-	A-	B
T.Sınai Kalkınma Bankası A.Ş.	-	-	-	-	B	C	B	B	B	B
T.Şişe Ve Cam Fabrikaları A.Ş.	-	-	-	-	C	C	B	C	C	C
Tabcorp Holdings	-	-	-	-	-	-	-	D	D	D
Taiheiyo Cement Corporation	-	C	D	C	C	D	B-	C	D	D
Taisei Corporation	-	A-	B	-	A	B	A	A-	A-	A-
Taishin Financial Holdings	-	-	-	-	-	E	C	C	B	B
Taiwan Cement	-	-	-	-	-	-	-	-	-	B
Taiwan Mobile Co. Ltd.	-	-	-	-	-	D	A-	B	B	A
Taiwan Semiconductor Manufacturing	B	B	B	B	B	B	A-	A-	B	B
Taiyo Yuden Co., Ltd.	-	D	C	C	C	D	C	C	-	-
Takashimaya Company, Limited	-	-	-	-	-	-	-	-	-	C
Takata Corporation	-	-	E	E	-	-	-	-	-	-
Takeda Pharmaceutical Company Limited	-	B	C	-	B	B	A-	B	A-	A-
Takkt AG	-	-	D	B	C	C	C	C	B	D
Talanx AG	-	-	-	-	-	-	D-	-	-	B-
Talisman Energy Inc.	-	-	C	D	-	-	-	-	-	-
TalkTalk Telecom Group	-	E	E	C	-	D	B	B	B	B
Talvivaara Mining Company	D	E	E	D	E	E	-	-	-	-
Tapestry Inc	-	-	-	-	-	D	C	C	C	C
Target Corporation	C	C	B	B	C	C	C	C	C	B
Tarkett	-	-	-	-	-	-	D	C	C	-
Tata Chemicals	-	-	-	-	-	-	B	B	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tata Communications	-	-	-	-	-	-	-	C	B	C
Tata Consultancy Services	B	C	C	-	A	-	A-	A-	B	A-
Tata Consumer Products Ltd	-	-	-	-	-	-	-	-	B	-
Tata Global Beverages	-	-	-	-	-	-	A-	-	-	A-
Tata Motors	-	-	-	-	-	-	A-	B	A-	B
Tata Power Co	-	-	-	-	-	-	C	C	D	D
Tata Steel	-	-	-	-	-	-	A-	B	B	B
Tate & Lyle	-	B	B	A-	B	B	A-	A-	D	C
Tatneft OAO	-	-	-	-	-	-	-	-	-	D-
Tatts Group	-	E	-	E	D	E	C	-	-	-
TAV Havalimanları Holding A.Ş	-	-	-	-	B	C	C	C	C	C
Taylor Wimpey Plc	-	D	D	D	C	D	B	B	B	B
TC Energy	-	-	-	-	-	-	-	-	C	-
TCL Corporation	-	-	-	-	-	E	-	D	-	C
TD Bank Group	C	C	B	A	A	A-	A-	A-	A-	A-
TDC A/S	B	C	C	D	E	D	-	D	-	-
TDK Corporation	-	-	-	-	B	C	C	D	D	A-
TE Connectivity	-	-	D	C	D	D	C	C	C	C
Tecan Group Ltd	-	-	-	-	E	E	C-	C-	D	D
Tech Mahindra	-	-	-	-	A	-	A	A-	A-	A-
Technicolor SA	-	-	D	-	D	D	D	D	D	D
TechnipFMC	-	-	-	-	-	-	-	A-	D	D
Technopolis	-	-	-	-	-	-	-	B	C	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Teck Resources Limited	C	E	B	B	A	B	B	B	B	B
Tecnicas Reunidas	-	-	-	C	B	B	A-	A-	A-	A-
TECO Electric & Machinery Co., Ltd.	-	-	-	-	-	-	B	-	-	C
Ted Baker Plc	D	E	E	C	C	D	B	B	B	-
Teekay Petrojarl ASA	-	C	-	-	-	-	-	-	-	-
Teijin Ltd.	-	D	B	-	C	B	B	C	D	D
Tekfen Holding A.Ş.	-	-	-	-	-	-	-	B	B	A-
Teknion Limited	-	-	-	-	-	B	B	B	-	-
Tele2 AB	C	C	-	-	-	-	-	-	-	C
Telecinco	-	E	-	-	-	-	-	-	-	-
Telecity Group	-	-	-	-	-	E	-	-	-	-
Telecom Italia	B	B	C	-	B	B	B	B	B	B
Telefónica	A	B	B	B	A	A	A	A	A	A
Telegraaf Media Groep	-	-	D	-	C	C	C	C	-	-
Telekom Austria AG	-	-	E	-	B	B	A-	B	B	B
Telenet Group Holding NV	-	-	-	B	B	-	B-	-	-	-
Telenor Group	C	C	C	A	A	A	A-	A-	B	B
Television Francaise (T.F.1)	-	-	E	D	C	E	-	-	-	-
Telia Company AB	B	C	D	B	A	B	B-	B	D	B-
Telkom SA Limited	-	D	C	C	B	D	C	C	D	C
Telstra Corporation	C	D	B	B	B	B	A	A-	A	A
Telus Corporation	-	-	C	C	B	B	A-	C	B	A-
Ten Network Holdings	-	B	C	-	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tenaga Nasional	-	-	-	-	-	-	-	D-	-	-
Tenet Healthcare Corporation	-	-	-	-	-	-	D	D-	D-	-
Tennant Company	-	-	-	-	-	-	-	-	-	A-
Tenneco	-	-	-	-	-	-	-	-	C	C
Teradata Corp.	-	-	-	-	-	E	D	D	-	D
Teradyne Inc.	D	D	C	D	-	D	D	C	C	C
Terex Corporation	-	-	-	-	-	E	C	C	B-	C
Terna	B	B	B	-	B	C	B	C	B	B
Terumo Corporation	-	-	-	-	-	-	C	D	B	B
Tesco	A	A	B	A-	A-	C	A	B	C	B
Teva Pharmaceutical Industries Ltd	-	E	D	-	B	B	A-	A-	A-	B
Texas Instruments Incorporated	C	E	D	D	D	D	C	C	B-	B-
Textron Inc.	-	-	-	B	D	D	C	D	D	C
TGS-NOPEC Geophysical Company ASA	-	-	-	-	-	-	-	-	-	C
Thales	-	B	C	C	A	A-	A-	A-	A-	B
The AES Corporation	-	-	-	C	C	B	A-	A-	A-	A-
The Allstate Corporation	-	-	-	-	-	-	-	-	B	-
The Bank of Yokohama, Ltd.	-	-	-	-	-	E	D	D	D-	D
The Chubb Corporation	-	-	D	-	-	-	-	-	-	-
The Chugoku Electric Power Company	-	-	-	-	-	-	-	-	-	B
The Coca-Cola Company	B	C	B	A-	B	B	B	B	B	B
The Dow Chemical Company	-	-	-	-	-	-	-	-	-	B
The Hachijuni Bank, Ltd.	-	-	-	-	-	B	B	B	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
The Hain Celestial Group, Inc.	-	-	-	-	-	-	C	-	-	D
The Hartford Financial Services Group, Inc.	-	B	B	A	A	A	B	A-	B	A-
The Hershey Company	B	C	C	B	C	D	C	C	D	C
The Home Depot, Inc.	-	B	B	A-	A-	A-	A-	A-	A	A
The J.M. Smucker Company	C	B	B	B	C	C	C	C	C	C
The Kansai Electric Power Co., Inc.	-	-	-	-	-	-	-	B	D	B
The Kraft Heinz Company	-	-	-	-	-	-	C	C	D	-
The Mosaic Company	B	B	B	A	A	A	A	A	A-	A-
The Nanto Bank, Ltd.	-	E	C	D	D	-	-	-	-	-
The Navigator Company	-	-	-	-	-	-	-	-	A	A-
The Nisshin OilliO Group,Ltd.	-	-	-	-	-	-	C	D	-	D
The Pack Corporation	-	-	-	-	-	-	-	C-	-	-
The Southern Company	-	D	-	-	-	-	-	-	-	B
The Spar Group Ltd	C	C	D	D	-	B	B	B	B	B
The Tokyo Electric Power Company Holdings, Inc (TEPCO)	-	-	-	-	-	-	B	A-	B	B
The Travelers Companies, Inc.	B	D	C	C	D	D	-	C	C	B
The Yokohama Rubber Co., Ltd.	-	-	-	-	-	-	-	-	B	-
Thermo Fisher Scientific Inc.	-	-	D	D	D	D	C	D	C	C
THK Co., Ltd.	-	-	D	-	E	E	C	C	D	C
Thomas Cook Group	B	C	C	C	B	C	B	B	C	C
Thomson Reuters Corporation	D	D	D	B	A-	B	B	A-	B	B
Thule Group Ab	-	-	-	-	-	-	-	C	D	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
ThyssenKrupp AG	B	D	D	-	B	A-	A	A	A	A
Tieto Oyj	-	A-	A	B	B	B	B	A-	B	B
TietoEVRY	-	-	-	-	-	-	-	-	A	-
Tiffany & Co.	B	C	C	C	C	C	A-	C	B	B
Tiger Brands	C	C	D	C	B	C	C	C	C	C
Time Warner Inc.	-	-	-	-	E	E	C-	C-	D	-
TIS Inc.	-	-	-	-	-	-	-	-	-	D
Titan Company	-	-	-	-	-	-	-	-	D	D
TJX Companies, Inc.	C	C	B	B	B	C	A-	B	A-	B
TKH Group	-	-	-	-	-	-	C	D	D	C
TLG Immobilien AG	-	-	-	-	-	-	-	D	-	-
TMX Group Limited	-	-	B	D	D	-	-	-	-	-
Toda Corporation	-	-	-	C	B	B	A	B	A	-
Toda Kogyo Corp	-	-	-	-	-	-	D	D	D	C
Tofaş Türk Otomobil Fabrikası A.Ş.	-	-	-	-	A	B	A-	B	B	B-
Toho Gas Co., Ltd.	-	-	-	-	-	B	A-	B	D	A-
Tohoku Electric Power Co., Inc.	-	-	-	-	-	-	-	-	-	B
Tokai Rika Co., Ltd.	-	-	-	-	-	-	-	-	C	C
Tokio Marine Holdings, Inc.	B	B	D	-	C	B	B	B	B	A
Tokmanni	-	-	-	-	-	-	-	-	-	C
Tokuyama Corporation	-	-	-	-	-	-	-	C-	D	C
Tokyo Century Corporation	-	-	-	-	-	-	C	C-	D	B-
Tokyo Electron Ltd.	-	-	D	-	C	B	B	B	B-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tokyo Gas Co., Ltd.	-	D	D	-	B	A	A-	A-	B	A-
Tokyo Steel Manufacturing Co., Ltd.	-	-	-	-	-	-	-	B	A-	A
Tokyo Tatemono Co., Ltd.	-	-	-	-	-	-	-	-	-	B
Tokyu Construction Co., Ltd.	-	-	-	-	-	-	-	-	-	B-
Tokyu Corporation	-	D	D	D	-	-	-	-	-	D-
Tokyu Fudosan Holdings Corporation	-	-	-	B	B	C	C	B	A-	A-
Toll Holdings	-	C	C	C	B	-	-	-	-	-
Tom Tom NV	-	-	-	-	-	-	-	D-	-	-
Tomoku Co., Ltd	-	-	-	-	-	D	-	D	-	-
Tomra Systems ASA	C	C	C	B	D	E	C	C	D	D
Tongaat Hulett Ltd	C	D	B	C	B	B	B	B	C	-
Topdanmark	C	D	C	D	C	C	C	C	C	C
Toppan Printing Co., Ltd.	-	D	D	-	A	C	B	A-	B	B
Toray Industries, Inc.	-	B	C	C	B	B	A-	B	B	A-
Torm A/S	B	C	-	-	-	-	-	-	-	-
Toromont Industries Ltd.	-	-	-	-	-	E	D	-	D-	-
Toshiba Corporation	C	C	C	A	A	A-	A	A-	B	B
Tosoh Corporation	-	-	-	-	-	-	-	-	-	A-
Total	B	B	B	C	C	C	B	A-	A-	A-
Total Produce PLC	-	-	-	-	-	-	-	-	-	C
Total System Services (TSYS)	-	-	-	-	-	E	D	D	D	D
Toto Ltd.	-	B	B	-	A	B	A-	B	B	B
Tourmaline Oil Corp	-	-	-	-	-	-	-	-	D	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Toyo Ink SC Holdings Co., Ltd.	-	-	-	-	C	C	C	C	-	-
Toyo Seikan Group Holdings, Ltd.	-	C	D	-	D	C	C	D	C	B-
Toyo Suisan Kaisha, Ltd.	-	-	D	D	D	-	-	D	-	-
Toyo Tire & Rubber Co Ltd	-	-	-	-	-	D	C	D	-	-
Toyo Tire Corporation	-	-	-	-	-	-	-	-	B-	B-
Toyobo Co., Ltd.	-	E	D	C	C	D	B-	C	D	-
Toyoda Gosei	-	-	-	-	-	C	B	A-	B	A-
Toyota Boshoku Corporation	-	-	-	-	-	B	B	A-	B	B
Toyota Caetano	-	-	-	-	C	D	A-	B	A-	B
Toyota Industries Corporation	-	D	C	D	D	C	B	B	A	A
Toyota Motor Corporation	A	D	C	B	A	B	A	A	A-	A
Toyota Tsusho Corporation	-	-	-	-	-	-	-	C	B	A-
TPK Holding Co., Ltd.	-	-	-	-	-	-	-	-	D	-
Trade Me	-	-	-	C	-	-	-	-	-	-
Trafigura Beheer B.V.	-	-	-	-	-	-	-	-	D	C
Trane Technologies	-	-	-	-	-	-	-	-	B	-
TransAlta Corporation	-	-	C	C	C	C	B	B	B	B
Transcend Information, Inc.	-	-	-	-	-	-	D	-	-	-
Transcontinental Inc.	-	-	C	-	-	E	C	C	C	C
Transnet	-	-	-	-	-	B	B	B	B	-
Transocean Ltd.	C	C	-	-	-	-	-	-	-	-
Transurban Group	-	B	B	-	-	-	-	-	-	C
Travis Perkins	C	D	D	B	B	B	B	B	B-	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Treasury Wine Estates	-	-	D	C	D	-	-	-	-	-
TreeHouse Foods Inc	-	-	-	-	-	-	-	D	-	-
Trelleborg AB	B	C	C	B	C	D	C	C	B	A-
Trican Well Service Ltd.	-	-	E	E	E	E	-	-	-	-
Trimble Navigation Ltd.	-	-	-	-	-	E	-	-	D	C
Trinseo LLC	-	-	-	-	-	-	-	D	B-	B
Triunfo	-	-	-	-	-	-	C	-	-	-
True Corporation	-	-	-	-	-	C	C	C	B	B
Truworths International	C	E	D	D	D	D	B	B	B-	C
Tryg	B	B	B	C	-	-	-	-	-	-
TS Tech Co.,Ltd.	-	-	-	-	C	C	C	C	B	A-
TSRC Corp	-	-	-	-	-	-	-	-	-	D
Tsubakimoto Chain Co.	-	-	-	-	-	-	C	-	-	-
Tsumura & Co.	-	B	B	-	B	B	B	C	D	D
TT Electronics Plc	-	-	-	-	-	D	C	C	-	D
TUI AG	A	B	B	B	A-	-	-	-	-	-
TUI Group	-	-	-	-	-	A-	A-	A-	A-	A
Tullow Oil	-	D	-	B	D	D	C	C	D	D
Tupy SA	-	-	-	-	-	-	D	D	-	C
Türk Telekomünikasyon A.Ş.	-	-	-	-	-	-	-	D	C	B
Turkcell İletişim Hizmetleri A.Ş.	-	-	-	-	D	C	B	C	C	C
Türkiye Halk Bankası A.Ş.	-	-	-	-	C	C	B	C	B	B
Türkiye Kalkınma Bankası A.Ş.	-	-	-	-	-	-	-	B-	-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Türkiye Vakıflar Bankası T.A.O.	-	-	-	-	-	C	B	B	B	B
TXC Corporation	-	-	-	-	-	D	C	-	-	-
Tyson Foods, Inc.	-	-	-	-	-	-	-	C	B-	B
U.S. Bancorp	C	C	C	C	D	D	A-	A-	A-	A-
Uacj Corp	-	-	-	-	-	-	-	D-	-	-
Ube Industries, Ltd.	-	C	C	-	B	B	B	B	D	D
UBI Banca	-	B	C	-	C	D	C	C	C	C
Ubisoft Entertainment	-	-	-	-	-	-	D	-	-	-
UBM plc	B	D	B	A	B	B	B	B	C	-
UBS	A	A	A	A-	A	B	A	A	A	A-
UCB SA	-	-	-	-	D	C	C	B	B	B
UDG Healthcare PLC	-	-	-	-	D	D	C	C	C	B-
UGL	-	-	D	D	C	E	C	-	-	-
Ülker Bisküvi Sanayi A.Ş.	-	-	-	-	-	-	C	C	-	C
Ultrapar Participações S/A	-	-	-	-	B	C	A-	B	B	B
Ultratech Cement	-	-	-	-	-	-	B	C	B	B
Umicore	-	-	-	C	-	-	-	-	D	D
UNFI	-	-	-	-	-	-	-	C	B-	B
Unibail-Rodamco-Westfield	C	C	B	B	B	-	-	-	-	A
Uni-Charm Corporation	-	D	D	D	B	B	A-	B	B	B
UniCredit	C	D	C	C	B	C	A-	B	B	B
Unilever plc	B	B	A	A	A	A	A	A	A	A
Union Pacific Corporation	C	D	B	B	B	B	A	A-	A-	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Uniper SE	-	-	-	-	-	-	-	-	C	B-
Unipol Gruppo	-	D	E	D	C	C	-	-	-	-
Unipres Corporation	-	-	-	-	-	-	-	D	C	B-
Uni-president Enterprises	-	E	E	D	D	D	C	-	-	-
Unisys Corporation	-	-	-	-	E	E	D	D	-	-
Unite Students	-	-	E	E	B	C	B	B	B	C
United Airlines Holdings	-	-	-	-	-	-	-	-	B	-
United Co RUSAL PLC	-	-	-	-	-	-	-	C	C	B
United Continental Holdings	-	-	-	-	-	B	A-	B	-	A-
United Microelectronics	-	C	B	A	B	A-	A-	A-	A-	A-
United Overseas Bank	-	-	-	-	-	-	-	-	-	D
United Rentals	-	-	-	-	-	-	D-	D-	-	D-
United States Steel Corporation	-	D	C	B	B	C	-	-	-	-
United Utilities	B	B	B	C	A-	B	B	A-	B	B
UnitedHealth Group Inc	-	D	D	B	B	C	C	C	C	B
Universal Robina	-	-	-	-	-	-	-	D	D	D
Unum Group	D	D	C	A	B	B	A-	A-	-	C
UPM-Kymmene Corporation	-	C	B	A-	A	A-	A	A-	A-	A
Uponor Corporation	C	C	C	C	C	C	B	B	C	B
UPS	B	A-	B	A-	A-	B	A-	A-	A	B
Uralkali PJSC	-	-	-	-	-	E	D	D	-	-
US Foods	-	-	-	-	-	-	-	-	-	C
Ushio Inc.	-	D	D	-	C	C	C	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Vacon Oyj	-	-	E	C	C	D	-	-	-	-
Vaisala Oyj	C	C	C	B	A	A-	B	B	B	B
Vale	B	B	C	-	B	B	A-	A-	B	B
Valeo Sa	-	-	E	-	B	C	B	A-	A	B
Valiant Holding AG	-	-	-	E	E	D	C	A-	B	C
Valid Solucoes	-	-	-	-	-	-	-	D	-	C
Vallourec	C	C	D	-	B	C	A-	A-	A-	A
Valmet	-	-	-	-	B	B	A	A-	A	A
Valqua Ltd.	-	-	-	-	-	C	C	C	-	C
Van Lanschot Kempen NV	-	-	-	-	B	C	B	A	B	B
Vanguard International Semiconductor Corporation	-	-	-	-	-	D	C	D	C	A-
Varian Medical Systems Inc	-	E	D	C	C	B	B	B	B	B
Vector	-	-	-	-	-	-	-	-	-	B
Vectura Group	-	-	D	D	C	E	-	C	D	D
Vedanta Resources PLC	-	C	D	B	C	C	C	C	D	D
Veidekke ASA	D	E	C	C	C	B	A-	A-	A	A
Ventas Inc	-	-	-	C	B	C	B	B	A-	B
Veolia Environnement SA	B	B	B	B	B	B	A	A-	A-	B
Verbund AG	-	B	B	-	A	A-	A	B	A-	C
Verisk Analytics Inc	-	-	-	-	-	-	-	C	C	C
Verizon Communications Inc.	B	C	B	B	B	B	A-	A-	A-	B
Vermilion Energy Inc.	-	-	-	-	B	B	A	A-	A-	A-
Vestas Wind Systems A/S	B	C	C	B	C	C	C	C	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Vestel Beyaz Eşya Sanayi ve Ticaret A.Ş.	-	-	-	-	-	D	D	B	-	C
Vestel Elektronik Sanayi ve Ticaret A.Ş.	-	-	-	-	C	B	B	B	B	C
VF Corporation	B	D	B	B	B	C	B	C	C	A-
Via Varejo	-	-	-	-	-	-	D	D	C	C
Viacom Inc.	-	-	-	D	D	C	C	C	C	B
Viavi Solutions Inc.	-	D	C	A	B	B	B	-	-	-
Vicinity Centres	-	-	-	-	-	-	A-	A-	B	A
Victrix Plc	-	-	-	E	D	D	C	D	B-	B-
Vienna Insurance Group AG	-	-	-	-	-	-	-	-	-	D-
Vifor Pharma AG	-	-	-	D	D	D	C	C	C	C
Village Roadshow	-	-	-	-	-	E	D	D	D	D
Villeroy & Boch AG	-	-	-	-	-	D	C-	C-	D	C
Vilmorin & Cie	-	-	-	-	-	E	-	-	-	-
Vina Concha y Toro S A	-	-	-	-	-	D	B	B	C	B
Vinci	B	B	C	B	A-	B	B	B	A-	A-
Virgin Australia Holdings	-	D	B	-	-	-	-	-	-	-
Virgin Money Holdings	-	-	-	-	-	-	C	D	C	-
Virtusa	-	-	-	-	-	-	B	B	B	B
Visa	-	-	E	D	E	D	C	C	C	B
Visteon	-	-	-	-	-	D	C	D	B-	C
Vivendi SA	C	E	E	D	E	D	C	-	C	D
VMware, Inc	-	-	-	-	-	-	A-	A-	B	B
Vodacom Group	B	B	B	B	B	B	A-	A-	B	B

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Vodafone Group	C	B	C	B	B	D	B	A-	B	A-
Voestalpine AG	-	-	-	-	-	-	-	C	B	A-
Volex plc	-	-	-	-	-	E	C	C	D	C
Volkswagen AG	B	B	B	-	A	-	A-	A-	A-	A-
Voltalia Sa	-	-	-	-	-	-	-	-	-	C
Volvo	C	D	D	C	B	A-	A-	-	-	-
Vonovia	-	-	-	-	-	-	-	-	C	B
Vontobel Holding AG	-	-	B	B	B	B	A-	B	B-	B-
Vopak	-	-	C	-	C	D	C	C	D	-
Voya Financial	-	-	-	-	-	-	D	B	C	C
VP Bank Gruppe	-	-	-	-	-	E	-	-	-	-
Vulcan Materials Company	-	-	-	-	-	-	-	-	-	D
W.R. Grace & Co.	-	-	-	-	-	-	-	-	-	D
W.W. Grainger, Inc.	C	E	C	B	B	A-	A-	A-	C	A-
Wabtec Corp.	-	-	-	-	-	-	D-	-	-	D
Wacker Chemie AG	-	D	C	B	B	B	B	B	B	B
Wacker Neuson SE	-	-	-	-	-	-	D	D	-	-
Wal Mart de Mexico	-	D	C	C	B	B	B	B	B	A-
Walgreens Boots Alliance	C	C	C	C	C	D	B	C	C	B
Wallenstam AB	-	C	C	C	-	D	-	-	-	-
Walmart, Inc.	B	B	B	A-	A	B	B	B	A-	A
Walsin Lihwa Corporation	-	-	-	-	-	-	-	-	-	D
Walt Disney Company	C	C	D	C	C	C	C	C	D	B-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Warehouse Group	-	D	D	C	B	C	B	B	C	C
Wärtsilä Corporation	-	D	C	C	B	C	B	B	C	C
Waters Corporation	-	-	D	C	D	D	C	C	D	C
Wavestone	-	-	-	-	-	-	-	C	B-	B-
Weatherford International Ltd.	-	-	-	-	-	-	-	-	-	C
Webuild S.p.A.	-	-	-	-	-	-	-	-	B	-
WEC Energy Group	C	D	E	D	E	-	D	C	D	B-
Weg S/A	-	-	-	B	C	C	B	C	D	D
Weichai Power Co.,Ltd.	-	-	-	-	-	-	-	-	-	D-
Weir Group	-	-	-	D	C	C	B	C	B	B
Wells Fargo & Company	B	A-	A	A	A	A-	A-	A-	A-	A-
Welltower Inc.	-	-	-	D	C	B	A-	B	C	B
Welspun India Ltd	-	-	-	-	-	-	C	-	D	D-
Wereldhave	-	-	D	-	C	C	C	B	B	C
Wesco International	-	-	-	-	-	-	C	C	C	-
Wesfarmers	B	B	B	B	B	C	A-	B	B	-
West Fraser Timber Co. Ltd.	-	-	E	-	E	E	D	-	-	-
West Japan Railway Company	-	-	D	-	D	D	D	B-	B-	B-
Western Areas	-	-	E	E	E	E	C	C-	D	D
Western Digital Corp	C	E	E	D	D	D	D	C	B	C
Westfield Corporation	B	C	D	B	C	-	C	A-	A-	-
Westpac Banking Corporation	-	A	A	-	B	A-	A	A-	B	B
Westport Innovations Inc	-	-	E	D	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
WestRock Company	-	-	-	-	-	-	B-	C	C	C
Wetherspoon	B	C	C	D	-	-	-	-	-	-
Weyerhaeuser Company	B	C	C	B	C	D	C	C	D	B
WH Smith	C	C	C	B	C	D	D	D	B	A-
Wheaton Precious Metals	-	-	-	-	D	D	C	C	C	B
Whirlpool Corporation	C	D	C	D	D	-	C	C	C	C
Whitbread Plc	C	C	B	B	B	B	B	B	B	B
Whole Foods Market, Inc.	C	D	E	C	D	D	D	-	-	-
Wihlborgs Fastigheter AB	-	D	D	D	-	-	-	-	-	-
William Demant Holding A/S	D	E	E	E	E	E	C-	D	-	-
Williams Companies, Inc.	C	-	-	-	-	-	-	-	-	-
Wilmar International Limited	-	-	-	-	-	D	C	C	C	C
Wilson Bayly Holmes-Ovcon Ltd	D	D	D	D	D	D	B-	C	C	C
Win Semiconductors Corp	-	-	-	-	-	-	-	-	-	C
Wincanton plc	-	D	C	C	B	D	B-	B-	B	B
Wincor Nixdorf AG	-	-	E	D	-	-	-	-	-	-
Windstream Corporation	-	-	-	-	-	-	D	D	D	C
Winpak Ltd.	-	-	-	-	-	-	-	-	-	B
Wipro	-	-	B	-	A	-	A	B	A-	A-
Wireless Group plc	C	D	D	-	-	-	-	-	-	-
Wisconsin Energy Conservation Corporation (WECC)	-	-	-	-	-	-	C	C	C	-
Wistron Corp	-	-	-	-	C	D	B	B	C	C
WM Morrison Supermarkets Plc	-	-	-	-	-	-	-	-	C	C

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Wolters Kluwer	-	-	-	-	C	C	C	C	D	C
Wood Plc	-	D	C	D	B	B	B	B	C	C
Woodford Patient Capital Trust	-	-	-	-	-	-	D-	-	-	-
Woodside Petroleum	-	B	B	C	C	C	B	C	C	C
Woolworths Holdings Ltd	B	A-	A	-	B	B	B	B	B	B
Woolworths Limited	B	B	B	B	B	B	B	B	C	B
Woongjin Coway Co., Ltd.	-	-	-	-	-	-	-	-	-	A-
Woongjin Energy	-	-	C	-	-	-	-	-	-	-
Woongjin Thinkbig CO., LTD.	-	-	C	-	-	-	-	-	-	-
Woori Bank	-	-	-	-	-	B	B	-	-	-
Workspace Group	C	D	C	D	B	B	A-	B	B	A-
Worldline SA	-	-	-	-	-	-	-	-	-	A-
Worldpay Inc	-	-	-	-	-	-	C-	D	D	-
WorleyParsons	-	-	D	D	-	D	B-	B	C	C
Worthington Industries	-	-	-	-	-	-	-	C-	D	C
WPP Group	-	D	B	B	B	B	A-	B	A-	B
WSP	B	B	C	-	B	B	B	A-	B	A-
Wyndham Destinations, Inc.	-	-	-	-	-	-	-	-	-	B
Wyndham Hotels & Resorts	-	-	-	-	-	-	-	-	-	A-
Wyndham Worldwide Corporation	-	B	B	B	A	A	A-	A-	-	-
Xaar plc	-	-	-	-	-	E	-	-	-	-
Xcel Energy Inc.	A	B	B	B	B	B	B	A-	-	B
Xchanging	-	-	-	E	-	-	-	-	-	-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Xerox Corporation	B	C	-	B	A-	B	A-	A-	A	A-
Xilinx Inc	-	-	E	-	D	E	D	C	C	C
XL Group Ltd	-	-	-	-	E	E	B	C	-	-
XP Power	-	-	E	D	D	D	-	-	D	D
XPO Logistics	-	-	-	C	D	B	-	-	-	-
Xstrata	-	C	C	C	-	-	-	-	-	-
Xylem Inc	-	-	-	D	C	C	B	C	A-	B
Yahoo Japan Corporation	-	-	-	-	-	-	-	-	-	D
Yakult Honsha Co Ltd.	-	-	-	-	-	-	-	-	-	B
Yamaha Corporation	-	D	C	-	C	D	C	B	B	B
Yamaha Motor Co., Ltd.	-	-	C	-	C	C	B	B	B	B
Yamana Gold Inc.	-	-	C	C	D	D	C	C-	D	C
Yamato Holdings Co., Ltd.	-	-	-	-	-	D	C	C	-	B
Yancoal Australia	-	-	E	-	-	-	-	-	-	-
Yapı ve Kredi Bankası A.Ş.	-	-	-	-	-	-	C	B	C	B
Yara International ASA	-	-	-	-	-	-	C	C	B	B
Yaskawa Electric Corporation	-	-	-	-	-	B	B	B	B	B
Yes Bank Limited	-	-	-	-	-	-	B	B	C	A-
Yit Oyj	-	-	D	C	D	D	C	C	D	D
Yokogawa Electric Corporation	-	-	-	D	-	E	B	A-	B	B
Yokohama Rubber Company, Limited	-	D	D	-	C	B	A	B	-	A
Yoox Net-a-porter Group	-	-	-	-	A	-	-	-	-	-
Yuanta Financial Holdings	-	-	-	-	-	-	C	B	A-	A-

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Firms	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Yue Yuen Industrial	-	-	-	-	-	-	-	-	-	B-
Yum! Brands, Inc.	B	D	B	B	B	D	C	A-	B	B
Yünsa Yünlü Sanayi Ve Ticaret A.Ş.	-	-	-	-	-	B	B	B	B-	B
Zalando SE	-	-	-	-	-	-	-	-	-	C
Zeon Corporation	-	-	-	-	-	-	C	C	D	D
Zhejiang Dahua Technology Co Ltd	-	-	-	-	-	-	-	-	-	C
Zhejiang Narada power source co.,Ltd.	-	-	-	-	-	-	-	-	-	C
Zhen Ding Technology Holding Ltd	-	-	-	-	-	-	B	B	B	B
Zignago Vetro SpA	-	-	-	-	-	D	C	B	B	B
Zimmer Biomet Holdings, Inc.	-	E	E	E	E	E	D	C	B-	B
Zorlu Enerji Elektrik Üretim A.Ş.	-	-	-	-	C	C	-	A-	-	B
ZPG PLC	-	-	-	-	-	E	-	-	-	-
Zurich Insurance Group	C	D	D	C	A	B	B	A-	B	A-