

The Piotroski Project

Backtesting methodology

1. Outline

This project builds on research conducted by J. Piotroski, who published a paper in 2000, offering a simple yet powerful framework to separate the winners from the losers in a value-investing context.

Several things differentiate this project from the original work by Prof. Piotroski:

- 1) **New factors.** Since the time of the original publication, the investment industry has witnessed a proliferation of anomalies, or factors, with new ones being discovered every year. Some anomalies even made it into a new, five-factor Fama & French model¹. I have reviewed all the major papers published between 2000 and 2018 and collected most of the factors related to accounting variables as well as certain market variables and tested them in a joint framework to find out which of them actually work.
- 2) **A novel approach to factor construction.** Several of the factors are constructed using a less-known method called "Q-scoring". I elaborate on this approach further in this paper.
- 3) **A stricter, more balanced definition of "undervalued".** In his paper, Prof. Piotroski separates all public stocks into quintiles according to their B/M values and takes the highest quintile (with the highest B/M). For reasons outlined in this paper, I sort the companies according to their BVIC/MVIC, the ratio of book value of invested capital to its market value. I also neutralize this metric so that it is not artificially tilted toward certain countries and industries that are cheap on average, given that this cheapness may be dictated by the fact that the market is pricing in some systemic macro risk, rather than that the companies belonging to these countries or industries are undervalued.
- 4) **Applying a method from the field of forensic accounting.** I download all the financial statements items for each company and calculate a so-called "Benford score", which is a wholly uncorrelated factor that is able to detect financial statement fraud using only mathematics. Further detail will be given below.
- 5) **A guided search for significant factors.** Unlike Prof. Piotroski, who allegedly came up with his nine signals through studying professional and academic articles, picking the ones suited to his professional taste and acumen, I employ an algorithm similar to a machine learning method called boosting² to find the best-performing set of variables.

¹ Showing that EMH proponents are forced to add on more factors to their models to prove that the market is efficient and sustainable alpha is impossible.

² Upon addition of each new factor to the model, misclassified data is given more weight than that which has been classified correctly, thus forcing the procedure to look for a next factor that will address the instances of misclassified data. For example, I gave more weight to years that underperformed the market.

2. Initial screen

I test my strategy for returns relating to years 2007-2018. Data³ is downloaded for years 2005-2018 (since some variables require at least two years of data). Because the strategy is fundamentals-based and requires fiscal year-end reports, the screening procedure consists of sifting all public listed stocks through criteria that are effective as of April, 30th, each year, since this is when most companies will have published their fiscal year-end reports.

Here are the main criteria for the screen:

- Company type: Public, active, listed companies
- Security type: Common stock
- Market cap as of April, 30th: >\$50 million
- Excluding Financials (since for this sector classical financial ratios are widely considered less applicable)

3. Addressing various biases

Overfitting. To eliminate overfitting, the data set is separated into a training set and a testing data set. The model is trained on years 2007-2016 and tested on 2017-2018. To ensure that the results are not spurious, the model is finally tested on a subset of both the training and the testing data sets that represents **European companies only**⁴.

Look-ahead bias. This is a fairly common mistake of backtesting procedures, since most researchers lack sophisticated analytical proprietary databases that are able to download only data that has been available starting a certain "as of" date. Luckily, the Capital IQ database lets the researcher do exactly this. Consequently, one can be sure that the fundamentals that are downloaded as of each April 30th were readily available on that date.

Issues with market capitalization and liquidity. A minimum floor of a \$50 million Market cap is one of the things that ensures that the strategy is practically implementable since it eliminates micro-caps that are very thinly traded and have potential problems with liquidity, imposing high ex-ante returns that are actually very hard to harvest by a practitioner. This floor is used, in particular, by J. Greenblatt, the author of the widely acclaimed "magic formula investing".

Survivorship bias. This bias is implicitly addressed by the possibility of the Capital IQ database to screen for companies that had certain characteristics at a certain time.

Insufficient sample bias. The joined training data set contains 14,565 companies and spans 10 years, with two more years for out-of-sample testing. This includes all the companies with above-mentioned characteristics that existed during the years 2005-2017, and had those characteristics on April 30th of any given year. The smallest year-sample is for 2005, listing 3617 companies. This is more than enough for any statistically meaningful inferences in regards to the effectiveness of a particular strategy.

³ Data includes 198 variables relating to the IS, BS and CF of each company as well as additional variables such as volatility data, EBITDA, EV, Market cap and several others.

⁴ This proves that the results are not driven by emerging or developing markets premia.

Data-mining bias. Firstly, this is addressed by the fact that all variables that I used were taken from academic literature or inspired by it, ensuring that they all have sound economic basis for them. Secondly, instead of a blind searching process that tests all possible combinations⁵, I set up a logical process of step-by-step addition of factors where each next factor addresses the shortfalls of the previous ones. Overall, I identify eight significant factors that prove to be the most beneficial in terms of implementation for a strategy, which is one factor less than was identified by Piotroski, further reducing the probability that the results can be somehow attributed to pure chance.

4. Value screen

In his initial work, Prof. Piotroski tested whether a financial analysis-based strategy can improve upon a simple strategy of buying value stocks⁶. He used a widely known value metric B/M, which is the relation of equity book value to its market value. This metric does not take into account three important things:

First, the B/M ratio disregards the effects of financial leverage on companies' attractiveness. Consider two similar companies; each has a B/M of 1.5 (a hypothetical situation that assumes both companies are trading at roughly 0.67 times the book value of their equity). To bring this number to life, let us assume that both companies have \$150m of equity on their books and their capitalizations are \$100m. For a hypothetical value investor who judges by the B/M metric alone, it would seem like a bargain and she would be indifferent as to which of the companies to buy. However, company A has \$200m of debt on its balance while company B has zero leverage. While the reader may have already guessed that given the limited information, it would be more prudent to choose company B since it is probably less distressed, there is a way to show this mathematically. We calculate for both companies BVIC/MVIC, the ratio of book value of invested capital to its market value⁷. Company A's BVIC/MVIC is $(150+200)/(100+200)=1.17$, whereas Company B's ratio is still 1.5. Ben Graham would say that Company B has a wider "margin of safety" in terms of its **firm value**, i.e. its assets are trading at a steeper discount.

Second, the B/M ratio disregards the fact that during certain periods of time, various industries and countries may be "cheap", i.e., have high average B/M multiples for reasons other than undervaluation. For example, consider an economic crisis in a certain country. Alternatively, a sudden technological shift that prompts capital outflows from an industry. These events may cause such industries or countries to take up disproportionately high weights in a portfolio sorted on a purely B/M basis. This is why, having computed the BVIC/MVIC for each company, I neutralize each ratio through the following arithmetic adjustment:

$$Adjusted \frac{BVIC}{MVIC} = \frac{BVIC}{MVIC} * \frac{Median_{all \ firms} \left(\frac{BVIC}{MVIC} \right)}{Median_{industry} \left(\frac{BVIC}{MVIC} \right)} * \frac{Median_{all \ firms} \left(\frac{BVIC}{MVIC} \right)}{Median_{country} \left(\frac{BVIC}{MVIC} \right)}$$

⁵ Like "brute force generators", to borrow an analogy from the sphere of IT.

⁶ Its simplicity has been questioned by Piotroski himself, who rightly notes that the success of a simple strategy of buying high B/M stocks relies heavily on the outperformance of a few "star" stocks. Statistically speaking, the high B/M universe is skewed to the right in terms of returns distribution.

⁷ This metric was proposed by Shannon Pratt, author of some of the best guides for valuation practitioners, "Valuing a Business" and "Cost of Capital" to name a couple.

Third, book value of equity is frequently a negative number, and this distorts the meaning and interpretability of the B/M ratio. The proposed BVIC/MVIC lacks this disadvantage since the sum of all invested capital is by definition a positive number.

I test the strategy on the top tercile⁸ of companies according to their Adjusted BVIC/MVIC.

5. Types of variables tested

I tested 73 variables in total. Most of them were handpicked from academic literature and represent certain fundamentals-based financial ratios. Some variables were calculated by me. All the variables were transformed into binary form in line with Piotroski's work. All the variables I tested can be classified into roughly three major groups:

- 1) **Variables related to their own states in the past (horizontal analysis).** This category includes things like "increasing margins" or "decreasing leverage", which would be encoded as '1' if true and '0' otherwise. These variables require at least three years of firm data to be tested.
- 2) **Variables related to the medians⁹ across their respective industry.** These variables were first applied in a Piotroski-type framework by Partha S. Mohanram¹⁰ who successfully showed that Piotroski's general mode of thinking could be applied to "glamour", or low B/M stocks to sift for winners among such stocks. This category includes such variables as "margins are higher than the industry median", or "leverage is lower than the industry median".
- 3) **Variables that cannot be classified into above categories.** This is the most interesting category. Financial theory tells us that many ratios have optimal levels that usually relate to their industry medians. These ratios do not easily fall into the logic "the higher (lower) – the better (worse)", being more of the type that can be visualized in the form of a bell curve with the top point corresponding to some optimum state.
For example, one could reasonably assume that there is an optimal level of asset turnover (the relation of Sales to Assets) for a manufacturing firm. Too low a ratio would signal that the firm is under-utilizing its asset base. On the other hand, too high a ratio for a particular year may signal two things:
 - a. The firm is really good at utilizing its asset base, OR
 - b. The firm is engaged in aggressive revenue recognition that will lead to underperformance in the near future (e.g. when the time comes to collect accounts receivable that turn out to be bad debt)

As another example, take a firm that works in distributions. If one looks at the levels of Inventory measured in relation to Sales, one can conclude that too high inventory levels are an (unnecessary) cost and could be indicative of excess stock piling on the shelves. Too low Inventory levels, however, present

⁸ A tercile is formed when all data are sorted from largest to smallest and then separated into three segments of equal size. This procedure has to be done manually in MS Excel for lack of a =TERCILE() function.

⁹ Here, median is used instead of the mean because it is a more stable metric, less dependent on outliers and the irregularities in the shape of the distribution

¹⁰ Mohanram, P. S. Separating Winners from Losers among Low Book-to-Market Stocks using Financial Statement Analysis (2005)

a risk to the business since such a firm will have trouble managing unexpected surge in demand and will consequently lose customers.

Such cases are usually resolved by a thorough financial analysis that looks into a particular firm's past and present practices, considers abnormal balance sheet movements and reads all the notes to the accounts. However, since I was looking for an implementable and (ideally) automated system of picking stocks, I needed a way to encode such an analysis into numerical form, preferably consisting of zeroes and ones.

This has set me thinking. For these types of ratios, I needed an indicator that would reward a firm's closeness to the optimum. However, dynamics are important too – so I also needed an indicator that would reward the firm for progressing towards the optimum and penalize it for straying further from it.

I found the answer in the work of Stephen Penman¹¹ in the form of a measure called Q-score.

Although used for somewhat different purposes (namely, estimating the reasonableness of a firm's policy towards building accounting reserves as an indicator of its earnings quality), it proved to be the ideal candidate.

To illustrate, let us assume that we would like to understand whether the firm has a reasonable level of Inventory-to-Sales and whether (if it is significantly different from the industry median) it is at least headed in the right direction. The Q-score is a combination of two measures that respectively address both parts of this question.

The first measure, Q_a , answers the question "How far away is the metric from the industry median?", and is calculated as:

$$Q_a = \frac{Inventory_t}{Sales_t} - Median_{industry}\left(\frac{Inventory_t}{Sales_t}\right)$$

The second measure, Q_b , answers the question "How has the metric changed within the past year?", and equals:

$$Q_b = \frac{Inventory_t}{Sales_t} - \frac{Inventory_{t-1}}{Sales_{t-1}}$$

The final measure, Q , is the simple average of the two:

$$Q = (0.5 * Q_a) + (0.5 * Q_b)$$

The closer it is towards zero, the better. The logic of this indicator is best illustrated in the following matrix:

¹¹ Penman, Stephen H. and Zhang, Xiao-Jun, Accounting Conservatism, the Quality of Earnings, and Stock Returns (December 1999)

<div> <div>Relation to industry level</div> <div>Relation to past state</div> </div>	Less than	At	More than
Has fallen			
No change			
Has risen			

The green areas signify those states that should cause the least concern. The central piece captures the situation when the ratio is stable (there has been no change) and stays at or close to the optimum level. The bottom left piece considers the situation when the ratio has risen, but since the ratio is below optimal levels, this is a good situation. The piece on the upper right is the direct opposite, good as well.

Orange areas are areas of concern. They either capture situations when there is no improvement (when there should be) or when there has been movement that led to the ratio coming close to the optimal level but since this movement may well continue into the future (a fair assumption, all else equal), it may pass the optimum mark into less optimal values.

Red areas are red flags. They signify that the ratio is both far from being optimal and is headed in the wrong direction.

Once the Q-score for each firm is computed, for each year, I sort them from largest to smallest and separate them into quartiles¹² using `=QUARTILE()`. The rule is that the 1st and the 4th quartile, corresponding to extremely positive or negative values (red zones in the above table), are encoded as zeroes, while the 2nd and the 3rd quartiles, corresponding to numbers that are closer to the optimum levels, are encoded as ones.

6. Final variables

Using a guided search procedure briefly described in the outline, I separated a subset of variables that conforms to the following criteria:

- Maximizing the percentage of winners in the portfolio (defined as companies that show positive returns). This criterion ensures that the returns are not driven by a few outperformers, by forcing the whole distribution of returns in a portfolio to be left-skewed (i.e., the bulk of returns are positive).
- Maximizing mean returns in a portfolio. These are returns produced by buying an equal-weighted portfolio of all the companies selected by the strategy.

The process is as follows. The first variable is selected that maximizes the combination of the above criteria if one were to select companies from the universe

¹² Four segments of equal size, i.e. with the same number of stocks in each.

of undervalued stocks based solely on this variable. The variable should work across the whole training set, i.e. for years 2007-2016.

The weights for each year are then readjusted based on the results of the initial variable chosen. Only then do they become the basis of a search for a new variable. The next variable should optimize ex-ante returns for the training set, **given the new weightings**. In practice, this means that the next variable is “judged” by how it deals with the years in which the previous variable was weak according to our criteria. The logic of this procedure is similar to a statistical method known as boosting. The process of adding on variables continues until the number of companies chosen by the model for each year reaches a reasonable count for a diversified portfolio (30-50 companies).

Eight variables made it into the final model:

- 1) **Increase in $\frac{\text{Cash \& Equivalents}}{\text{Current Liabilities}}$** . This variable indicates that the situation with liquidity is improving in terms of the company’s ability to pay off its current liabilities with immediately available cash.
- 2) **Decrease in Current Assets**. This variable might seem to be at odds with the previous one, since Cash is part of Current Assets. However, coupled with the previous variable, it ensures that non-cash current assets are decreasing (which usually means that the Current Assets are decreasing as well, since Cash is seldom the dominant part of Current Assets, at least if the firm is properly utilizing the cash it produces). The largest non-cash current assets on the balance sheet are usually Receivables and Inventory. Both represent a cost to the business in terms of working capital investment, so a decrease in non-cash assets can be considered a positive signal¹³.
- 3) **Absence of new share issuance**. This is the only variable that found its way directly from Piotroski’s work. I will turn it over to the Prof. to explain the rationale: “Financially distressed firms¹⁴ that raise external capital could be signaling their inability to generate sufficient internal funds to service future obligations... Moreover, the fact that these firms are willing to issue equity when their stock prices are likely to be depressed (i.e., high cost of capital) highlights the poor financial condition facing these firms.”
- 4) **$\frac{\text{CAPEX}}{\text{D\&A}}$ less than industry median**. It is now well documented that aggressive investment in a given period causes companies to underperform on average in the next period, compared with their more CAPEX-conservative peers. On the denominator side, larger D&A means that the company is conservative in terms of depreciation policy. It follows that such a company is at least not trying to overstate its profits to prop its own price¹⁵. Taken as a ratio, CAPEX-

¹³ One might ask why this variable was calculated as “decrease in CA” instead of “decrease in non-cash CA”. This is because some firms are “sitting on their cash”. For these firms, growth in cash is not necessarily a good thing. Moreover, while their cash may be increasing and their non-cash CA may be decreasing, they will not show up as positive on the “decrease in CA” variable since cash usually represents the bulk of their CA – this can be thought of as penalization for such firms.

¹⁴ Here we assume, together with Prof. Piotroski, that most value firms, either measured as high B/M, or as high BVIC/MVIC, are prone to be financially distressed.

¹⁵ To be fair, a company may be incentivized to understate its profits for tax management purposes. Such a company’s asset base will quickly become inadequately small on the books and the adequacy of the company’s level of fixed assets is addressed by one of the variables, FA/Sales Q-score. In addition, such a situation will result in a large tax outflow when the asset is disposed of at a price much higher than its residual value.

to-D&A makes intuitive sense. In the long term and across the whole market, the ratio should be equal to one¹⁶. For a company that has only begun to build its asset base, this ratio is generally higher, as compared to a company that has gone through a CAPEX cycle and is now focused on utilizing its existing asset base more effectively rather than expanding. Investment is a cash outflow that does not necessarily promise adequate cash inflows in the future (especially for value firms since it may signal an all-or-nothing, last-resort type of attempt at gaining market share) whereas the effort put into effective utilization of an existing asset base is essentially a less risky game, the worst outcome being the retention of status-quo.

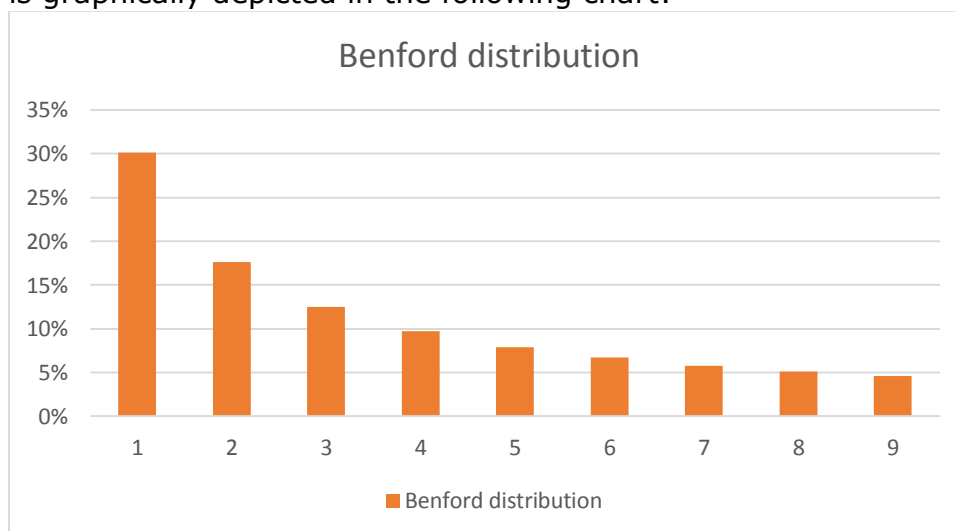
- 5) $\frac{\text{Fixed Assets}}{\text{Sales}}$ **Q-score.** This variable addresses a minor shortcoming of the previous one, namely a situation I described in the footnotes where the company is engaged in aggressive depreciation to evade tax in the short-term. This Q-score ensures that the property, plant and equipment used to generate sales is on an adequate level¹⁷ and/or headed in the direction of becoming adequate. Somewhat related to the widely used Turnover ratio (its reciprocal), the logic is that whilst it is generally desirable to generate as much sales with as little assets as possible, this situation cannot go on forever. Too high a turnover in relation to a firm's peers may signal underinvestment, which in turn means that sometime in the future, a company will be forced to invest more than its peers do. Such a large expected cash outflow reduces the firm's value. While many analysts may not realize such investment is called for, this variable may serve as an early warning signal. Naturally, it also penalizes firms that generate sales that are too low in comparison to their peers.
- 6) $\frac{\text{Accounts Payable}}{\text{Sales}}$ **Q-score.** This variable is best viewed through the lens of one of Porter's five forces, namely the bargaining power of suppliers. If the Accounts Payable are low (decreasing) for a given firm in relation to its Sales, this means that supplier bargaining power is high (increasing), i.e. the firm is unable to negotiate more lenient terms with its suppliers. This also usually means that the firm faces with a situation where the supplier largely controls the price, forcing down margins and, consequently, the stock price of the firm in question. This variable is also related to the first one in a way similar to that in which FA/Sales Q-score is related to the CAPEX/D&A being less than the industry median. Namely, it ensures that the growth in Cash/CL is not realized through a reduction in Accounts Payable beyond a necessary level, which would signal a need for larger working capital investment. Having described a situation where Accounts Payable are too small, we turn to the opposite case. While in a normal situation a firm that has high bargaining power over its suppliers can (and should) negotiate terms that are beneficial for the purposes of cash management, this principle should be applied with caution. Too high or an increasing Accounts Payable may well mean that the firm is having trouble paying off its suppliers. Even if not faced with cash shortfall, overextension of supplier credit eventually leads to penalties such as having to pay high interest.

¹⁶ This is a bit oversimplified since we are not accounting for inflation, which would mean that the actual average CAPEX/D&A ratio across the market should be slightly higher than one.

¹⁷ Defined as the industry median, see description of Q-score (type three variables).

7) RSI Q-score. This is an unusual instance of a technical signal in a fundamental model. However, the logic of it is actually very fundamental - to clear the system of any technical influences. The Relative Strength Index is an indicator that assumes values from 0 to 100 and shows whether the company is "overbought" (the average gain of the "up" periods exceeds the average loss of the "down" periods) or "oversold" (vice versa)¹⁸. If the RSI is larger than 70, the security is considered to be overbought (technical traders equate this with overvalued – I do not agree with that definition since it ties an intrinsic thing which is value to an extrinsic thing which is price – but that is beside the point of this exercise); if it is smaller than 30, the security is oversold. What technical traders believe is that after the RSI index reaches an extreme point to the either side, a correction will follow. Perhaps the sheer belief of many people in this indicator may make it a profitable short-term strategy. However, for my buy-and-hold strategy, this introduces unnecessary noise. Since I explicitly do not want abnormal trading activity to influence the model, I take a Q-score of the RSI, since it represents a closeness to normality.

8) Benford score. This is an indicator largely unheard of outside the circles of forensic accounting, an audit practice that analyses financial statements to uncover all sorts of irregularities in them. One of the instruments that forensic investigators use is based on Benford's Law¹⁹. Named after physicist Frank Benford, but actually discovered by Simon Newcomb in the 19th century, the law states that in naturally occurring sets of numerical data, the first digit will be "1" much more frequently than any other number, about 30% of the time, while numbers that start with "9" occur only about 5% of the time. The frequency of the first digit is defined by the equation $\log(1 + \frac{1}{\text{First digit}})$, and is graphically depicted in the following chart:

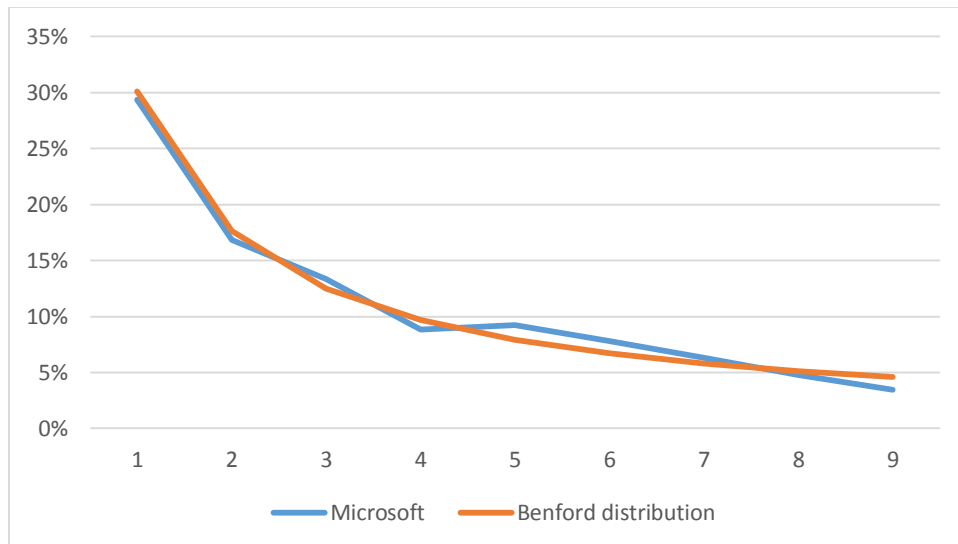


Shown to be applicable to a wide array of data, from population numbers and electricity bills to surface areas of all rivers in the world, it has been successfully applied as an aid in accounting fraud detection. People who make up figures tend to distribute their digits fairly uniformly. This means that, all else equal, accounting statements that have been tampered with will deviate from the Benford's Law more than those that have not.

¹⁸ The period for RSI calculation is usually 14 days.

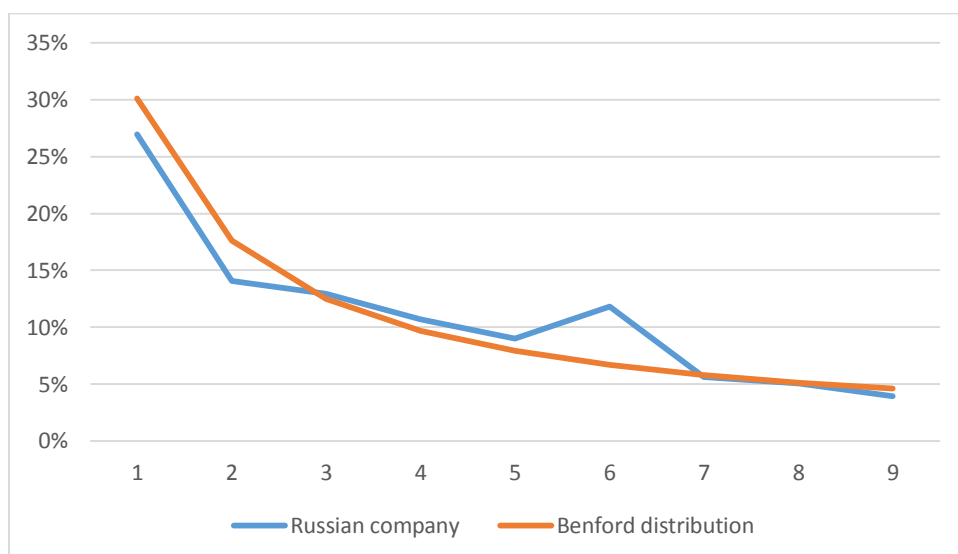
¹⁹ https://en.wikipedia.org/wiki/Benford's_law

Here are two illustrative examples of Benford's distribution at work. I decided to compare two companies' financial statements against Benford's Law. One company is an American IT giant Microsoft, a company scrutinized by the public and dozens of analysts and sure to be relatively straight in its accounting practices. Here is Microsoft's first-digit distribution plotted against Benford's:



Notice that although the fit is imperfect, it is a very close one and enforces our initial hypothesis about MSFT being a decent company in terms of absence of accounting malpractice.

As a second example, I decided to take a certain Russian private company that I **knew** prepared fraudulent accounting statements, showing rubbish, next-to-zero profits on its books while the owner siphoned off all the cash into rogue firms controlled by persons close to him. This was done because the Russian Ministry of Defense, who was the main customer of this company, had very strict regulations about the profit margins not exceeding certain levels. So instead of lowering his appetite, the owner overstated expenses, undoubtedly not without the help of his patrons within the Ministry itself. Here is the distribution for this company:



The visuals speak for themselves.

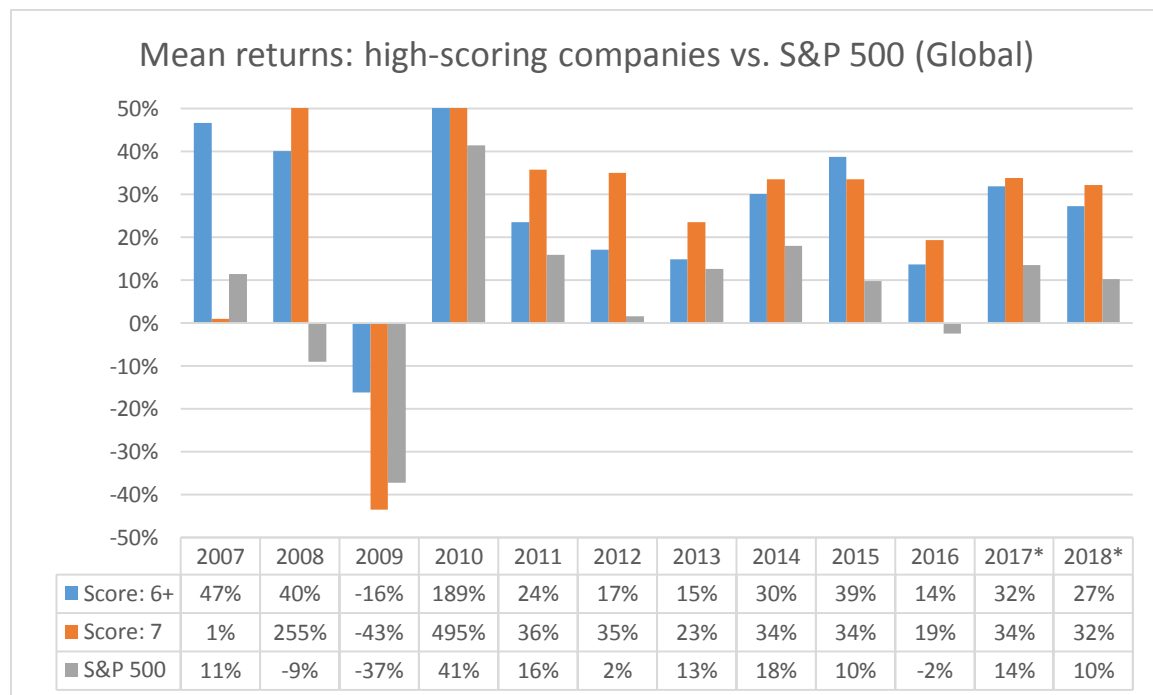
For all the financial data for each company and year, I calculate the mean absolute deviations of the frequency of the first digits from Benford's distribution. I then divide the dataset into quartiles and take as a positive signal if the firm's score is equal to or below the second quartile.

While the Benford score is applied as an unconditional sift, the other seven variables are binary and are added up. A company scores high if it passes the Benford test and fulfils the conditions of 6 or 7 other variables.

7. Results

7.1. Global universe

The table below summarizes the results of the backtested strategy on the global universe of stocks (equal-weighted):



**years that were used for out-of-sample testing of the final model*

Scores 6+ and 7 can be thought as analogous to scoring an 8+ or 9 in Piotroski's system. The number of stocks that were picked by the respective strategies:

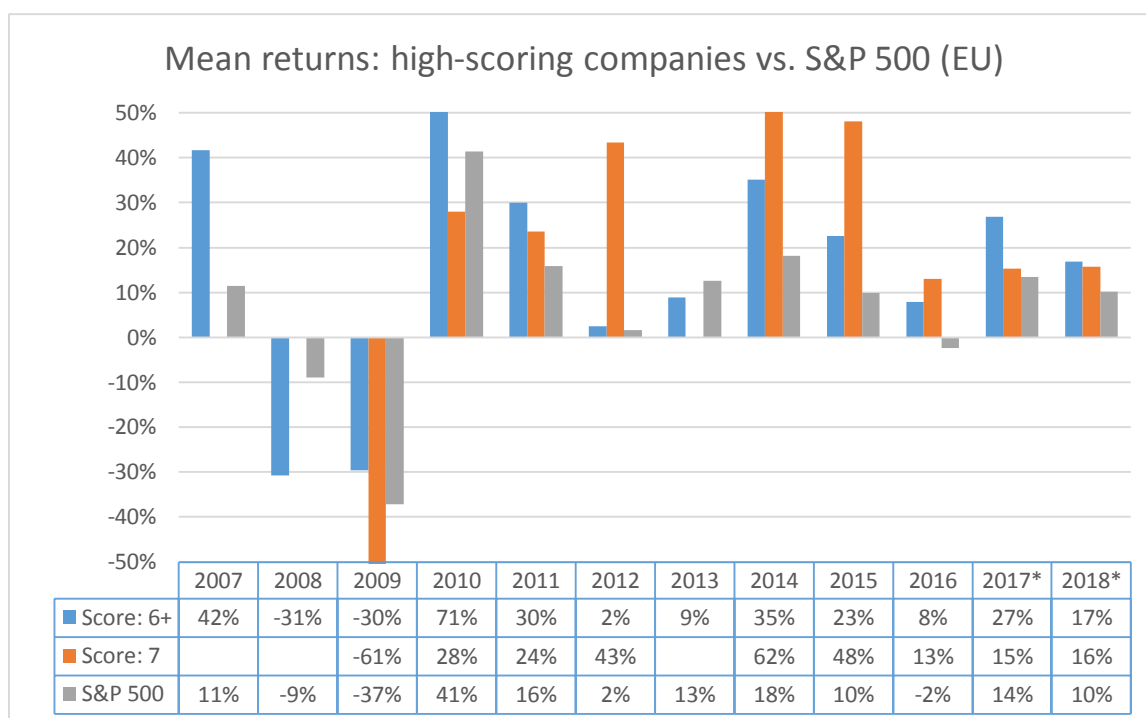
Number of stocks within the high-scoring portfolios (Global)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017*	2018*
Score: 6+	27	24	33	47	101	40	43	67	100	93	158	81
Score: 7	1	4	5	5	17	6	8	6	10	11	15	10

The list of actual stocks that made it into the portfolios, along with their country and industry, will be presented in the Appendix.

7.2. EU-only²⁰

Here are the results for European countries:



Empty cells mean that no companies among European ones were chosen for the portfolio since scoring a “seven” presumes passing a very strict set of criteria, just like scoring a “nine” on Piotroski²¹.

Number of stocks within the high-scoring portfolios (EU)

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017*	2018*
Score: 6+	6	5	7	9	28	15	6	13	17	19	34	26
Score: 7	0	0	2	2	6	3	0	1	1	5	6	3

8. Industry-wise and country-wise composition

To give a sense of what industries and countries the model picks up, I compiled two lists, based on the global model with criteria set to 6+.

Top 15 *industries* that were chosen over 2006-2017 (score 6+), number of companies and average 1-year forward return:

Industry (GICS)	Number of companies	Mean return
Electronic Equipment and Instruments	44	28%
Industrial Machinery	42	37%

²⁰ I consulted with this list to define European countries:

https://en.wikipedia.org/wiki/List_of_European_countries_by_population with two notable exclusions being Russia and Ukraine (high probability of creative accounting)

²¹ It is notable that if one goes to the site of American Association of Individual Investors, which ranks the most popular stock-picking systems (here: <https://www.aaii.com/stockideas/performance>) and downloads monthly data, for the past five or so years there will be mostly “0.0%” returns for “Piotroski 9” strategy. I contacted AAI and they confirmed that it means no stocks pass all the nine criteria.

IT Consulting and Other Services	42	26%
Electrical Components and Equipment	29	20%
Application Software	24	42%
Semiconductors	24	17%
Auto Parts and Equipment	23	117%
Restaurants	23	22%
Technology Hardware, Storage and Peripherals	23	14%
Internet Software and Services	22	8%
Apparel, Accessories and Luxury Goods	20	26%
Construction and Engineering	20	64%
Electronic Components	20	14%
Commodity Chemicals	19	36%
Specialty Chemicals	18	16%

Top 15 *countries* that were chosen over 2006-2017 (score 6+), number of companies and average 1-year forward return:

Country	Number of companies	Mean return
United States	223	38%
Japan	111	24%
South Korea	88	60%
India	41	40%
Australia	35	22%
United Kingdom	28	22%
Taiwan	27	20%
France	25	23%
Germany	25	25%
Canada	22	19%
China	22	9%
Hong Kong	19	180%
Italy	17	13%
Denmark	13	-2%
Netherlands	13	26%

For all industries and for all countries except one, the returns are strongly positive. This further serves as proof that the strategy is a balanced one and statistically significant, retaining its significance across industries and most countries. A promising thing to test in the future could be whether certain countries or industries should be left out while others given more weight, however that presupposes taking a macro-view, a trait this particular strategy tried to explicitly avoid when adjusting BVIC/MVIC, so caution should be taken.

9. Appendix. Companies that made it into the portfolios

Below are companies that made it into the Global portfolio (and, by proxy, into the EU portfolio since it is a slice of the global cake) along with the year when they were picked. All the companies scored **6+**. Companies that received a score of **7** are shown in bold blue font.

Year	Company (Exchange:Ticker)	Industry	Country
2006	Novanta Inc. (NasdaqGS:NOVT)	Electronic Equipment and Instruments	United States
2006	Hong Leong Industries Berhad (KLSE:HLIND)	Industrial Conglomerates	Malaysia
2006	GrainCorp. Ltd. (ASX:GNC)	Agricultural Products	Australia
2006	HRSOft Inc. (OTCPK:WSTM)	Internet Software and Services	United States
2006	Premium Brands Holdings Corporation (TSX:PBH)	Packaged Foods and Meats	Canada
2006	Oxford Instruments plc (LSE:OXIG)	Electronic Equipment and Instruments	United Kingdom
2006	Shenandoah Telecommunications Co. (NasdaqGS:SHEN)	Wireless Telecommunication Services	United States
2006	Sappi Limited (JSE:SAP)	Paper Products	South Africa
2006	Celestica Inc. (TSX:CLS)	Electronic Manufacturing Services	Canada
2006	Sustainable Forest Holdings Limited (SEHK:723)	Forest Products	Hong Kong
2006	Casey's General Stores, Inc. (NasdaqGS:CASY)	Food Retail	United States
2006	Daio Paper Corporation (TSE:3880)	Paper Products	Japan
2006	Volt Information Sciences Inc. (AMEX:VISI)	Human Resource and Employment Services	United States
2006	Russel Metals Inc. (TSX:RUS)	Trading Companies and Distributors	Canada
2006	Incus Investor ASA (OB:INC)	Steel	Norway
2006	CA, Inc. (NasdaqGS:CA)	Systems Software	United States
2006	Stein Mart Inc. (NasdaqGS:SMRT)	Apparel Retail	United States
2006	Look Incorporated (TSE:8029)	Apparel, Accessories and Luxury Goods	Japan
2006	Inapa - Investimentos, Participações e Gestão, SA (ENXTLS:INA)	Trading Companies and Distributors	Portugal
2006	Franklin Covey Co. (NYSE:FC)	Research and Consulting Services	United States
2006	Rock Creek Pharmaceuticals, Inc. (OTCPK:RCPI.Q)	Pharmaceuticals	United States
2006	Agilysys Inc. (NasdaqGS:AGYS)	Technology Distributors	United States
2006	Interface Inc. (NasdaqGS:TILE)	Office Services and Supplies	United States
2006	Bossard Holding AG (SWX:BOSN)	Trading Companies and Distributors	Switzerland
2006	John Menzies plc (LSE:MNZS)	Distributors	United Kingdom
2006	NN Inc. (NasdaqGS:NNBR)	Industrial Machinery	United States
2006	VINCI SA (ENXTPA:DG)	Construction and Engineering	France
2007	Take-Two Interactive Software Inc. (NasdaqGS:TTWO)	Home Entertainment Software	United States
2007	Youngone Holdings Co., Ltd. (KOSE:A009970)	Apparel, Accessories and Luxury Goods	South Korea
2007	Hot-Tech Co., Ltd. (KOSE:A015540)	Advertising	South Korea
2007	Identiv, Inc. (NasdaqCM:INVE)	Electronic Equipment and Instruments	United States
2007	Tongyang Inc. (KOSE:A001520)	Construction Materials	South Korea
2007	Vision Values Holdings Limited (SEHK:862)	IT Consulting and Other Services	Hong Kong
2007	Lakeland Industries Inc. (NasdaqGM:LAKE)	Apparel, Accessories and Luxury Goods	United States
2007	CEAT Limited (BSE:500878)	Tires and Rubber	India
2007	Cray Inc. (NasdaqGS:CRAY)	Technology Hardware, Storage and Peripherals	United States
2007	REX American Resources Corporation (NYSE:REX)	Oil and Gas Refining and Marketing	United States
2007	Eurotech SpA (BIT:ETH)	Technology Hardware, Storage and Peripherals	Italy
2007	Dalhoff Larsen & Horneman A/S (CPSE:DLH)	Trading Companies and Distributors	Denmark
2007	Aeterna Zentaris Inc. (TSX:AEZ)	Biotechnology	United States

2007	Dillard's Inc. (NYSE:DDS)	Department Stores	United States
2007	DFDS A/S (CPSE:DFDS)	Marine	Denmark
2007	Bluelinx Holdings Inc. (NYSE:BXC)	Trading Companies and Distributors	United States
2007	iRiver Ltd (KOSDAQ:A060570)	Consumer Electronics	South Korea
2007	Schweitzer-Mauduit International Inc. (NYSE:SWM)	Paper Products	United States
2007	Kortek Corporation (KOSDAQ:A052330)	Technology Hardware, Storage and Peripherals	South Korea
2007	Eiffage SA (ENXTPA:FGR)	Construction and Engineering	France
2007	Empresas ICA, S.A.B. de C.V. (BMV:ICA *)	Construction and Engineering	Mexico
2007	Lydall, Inc. (NYSE:LDL)	Industrial Machinery	United States
2007	Constantin Medien AG (XTRA:EV4)	Movies and Entertainment	Germany
2007	Wonik Cube Corp. (KOSDAQ:A014190)	Trading Companies and Distributors	South Korea
2008	Nordicom A/S (CPSE:NRDC)	Real Estate Development	Denmark
2008	QPL International Holdings Ltd. (SEHK:243)	Semiconductors	Hong Kong
2008	Carrols Restaurant Group, Inc. (NasdaqGS:TAST)	Restaurants	United States
2008	Pininfarina SpA (BIT:PINF)	Automobile Manufacturers	Italy
2008	Sato Restaurant Systems Co., Ltd. (TSE:8163)	Restaurants	Japan
2008	Norske Skogindustrier ASA (OB:NSG)	Paper Products	Norway
2008	Vectura Group plc (LSE:VEC)	Pharmaceuticals	United Kingdom
2008	Piaggio & C. SpA (BIT:PIA)	Motorcycle Manufacturers	Italy
2008	Liquor Stores NA Ltd (TSX:LIQ)	Food Retail	Canada
2008	Burwill Holdings Ltd. (SEHK:24)	Trading Companies and Distributors	Hong Kong
2008	Nanometrics Incorporated (NasdaqGS:NANO)	Semiconductor Equipment	United States
2008	Doosan Heavy Industries & Construction Co., Ltd. (KOSE:A034020)	Heavy Electrical Equipment	South Korea
2008	Poplar Co., Ltd. (TSE:7601)	Food Retail	Japan
2008	Woowon Development Co., Ltd. (KOSDAQ:A046940)	Construction and Engineering	South Korea
2008	Sosei Group Corporation (TSE:4565)	Pharmaceuticals	Japan
2008	Midas International Holdings Limited (SEHK:1172)	Commercial Printing	Hong Kong
2008	Tachibana Eletech Co. Ltd. (TSE:8159)	Technology Distributors	Japan
2008	Apptix ASA (OB:APP)	IT Consulting and Other Services	Norway
2008	Axcelis Technologies Inc. (NasdaqGS:ACLS)	Semiconductor Equipment	United States
2008	Dayou A-Tech Co., Ltd. (KOSE:A002880)	Auto Parts and Equipment	South Korea
2008	Steel Excel Inc. (OTCPK:SXCL)	Oil and Gas Equipment and Services	United States
2008	Invacare Corporation (NYSE:IVC)	Healthcare Equipment	United States
2008	3D Systems Corporation (NYSE:DDD)	Technology Hardware, Storage and Peripherals	United States
2008	Bluelinx Holdings Inc. (NYSE:BXC)	Trading Companies and Distributors	United States
2008	Gibraltar Industries, Inc. (NasdaqGS:ROCK)	Building Products	United States
2008	Tul Corporation (GTSM:6150)	Technology Hardware, Storage and Peripherals	Taiwan
2008	Korea Development Corporation Co., Ltd. (KOSE:A004200)	Construction and Engineering	South Korea
2008	Pfizer Inc. (NYSE:PFE)	Pharmaceuticals	United States
2008	Armstrong World Industries, Inc. (NYSE:AWI)	Building Products	United States
2008	I-Net Corporation (TSE:9600)	IT Consulting and Other Services	Japan
2008	Xcerra Corporation (NasdaqGS:XCRA)	Semiconductor Equipment	United States
2008	Koninklijke BAM Groep NV (ENXTAM:BAMNB)	Construction and Engineering	Netherlands
2008	NAPEC Inc. (TSX:NPC)	Construction and Engineering	Canada
2009	Dana Incorporated (NYSE:DAN)	Auto Parts and Equipment	United States
2009	Viking Supply Ships AB (publ) (OM:VSSAB B)	Marine	Sweden
2009	TASAKI & Co., Ltd. (TSE:7968)	Apparel, Accessories and Luxury Goods	Japan

2009	Vicat SA (ENXTPA:VCT)	Construction Materials	France
2009	Itron, Inc. (NasdaqGS:ITRI)	Electronic Equipment and Instruments	United States
2009	Jaeyoung Solutec Co., Ltd. (KOSDAQ:A049630)	Electronic Components	South Korea
2009	CJ Corporation (KOSE:A001040)	Industrial Conglomerates	South Korea
2009	Take-Two Interactive Software Inc. (NasdaqGS:TTWO)	Home Entertainment Software	United States
2009	Richardson Electronics Ltd. (NasdaqGS:RELL)	Technology Distributors	United States
2009	International Wire Group Holdings, Inc. (OTCPK:ITWG)	Electrical Components and Equipment	United States
2009	LONGTU KOREA Inc. (KOSDAQ:A060240)	Education Services	South Korea
2009	WT Microelectronics Co., Ltd. (TSEC:3036)	Technology Distributors	Taiwan
2009	Hyundai IBT CO.,LTD. (KOSDAQ:A048410)	Technology Hardware, Storage and Peripherals	South Korea
2009	Xcerra Corporation (NasdaqGS:XCRA)	Semiconductor Equipment	United States
2009	Federal-Mogul Holdings Corporation (NasdaqGS:FDML)	Auto Parts and Equipment	United States
2009	Koninklijke Ahold Delhaize N.V. (ENXTAM:AD)	Food Retail	Netherlands
2009	Midas International Holdings Limited (SEHK:1172)	Commercial Printing	Hong Kong
2009	Entegris, Inc. (NasdaqGS:ENTG)	Semiconductor Equipment	United States
2009	UTStarcom Holdings Corp. (NasdaqGS:UTSI)	Communications Equipment	United States
2009	Altus Group Limited (TSX:AIF)	Real Estate Services	Canada
2009	Woongjin Co., Ltd. (KOSE:A016880)	Industrial Conglomerates	South Korea
2009	LG Electronics Inc. (KOSE:A066570)	Consumer Electronics	South Korea
2009	ED Co., Ltd. (KOSDAQ:A033110)	Electronic Equipment and Instruments	South Korea
2009	Techno Mathematical Co., Ltd. (TSE:3787)	Application Software	Japan
2009	Meritor, Inc. (NYSE:MTOR)	Construction Machinery and Heavy Trucks	United States
2009	Outokumpu Oyj (HLSE:OUT1V)	Steel	Finland
2009	Wonik Cube Corp. (KOSDAQ:A014190)	Trading Companies and Distributors	South Korea
2009	Apptix ASA (OB:APP)	IT Consulting and Other Services	Norway
2009	Aimhigh Global Corp. (KOSDAQ:A043580)	Semiconductors	South Korea
2009	Chang Wah Electromaterials Inc. (TSEC:8070)	Technology Distributors	Taiwan
2009	The Timken Company (NYSE:TKR)	Industrial Machinery	United States
2009	Sanofi (ENXTPA:SAN)	Pharmaceuticals	France
2009	Paramount Corporation Berhad (KLSE:PARAMON)	Diversified Real Estate Activities	Malaysia
2009	Veeco Instruments Inc. (NasdaqGS:VECO)	Semiconductor Equipment	United States
2009	Haverty Furniture Companies Inc. (NYSE:HVT)	Home Furnishing Retail	United States
2009	Fair Isaac Corporation (NYSE:FICO)	Application Software	United States
2009	Ordina NV (ENXTAM:ORDI)	IT Consulting and Other Services	Netherlands
2009	Altran Technologies S.A. (ENXTPA:ALT)	IT Consulting and Other Services	France
2009	ON Semiconductor Corp. (NasdaqGS:ON)	Semiconductors	United States
2009	Walter Energy, Inc. (OTCPK:WLTG.Q)	Steel	United States
2009	Boston Scientific Corporation (NYSE:BSX)	Healthcare Equipment	United States
2009	The Eastern Company (NasdaqGM:EML)	Industrial Machinery	United States
2009	HKScan Oyj (HLSE:HKSAV)	Packaged Foods and Meats	Finland
2009	Numerex Corp. (NasdaqGS:NMRX)	Internet Software and Services	United States
2009	Caleres, Inc. (NYSE:CAL)	Apparel Retail	United States
2009	The Marcus Corporation (NYSE:MCS)	Hotels, Resorts and Cruise Lines	United States
2009	Cineplex Inc. (TSX:CGX)	Movies and Entertainment	Canada
2010	Vishay Intertechnology Inc. (NYSE:VSH)	Electronic Components	United States
2010	Kukdong Corp. (KOSE:A005320)	Apparel, Accessories and Luxury Goods	South Korea
2010	Orbotech Ltd. (NasdaqGS:ORBK)	Electronic Equipment and Instruments	Israel

2010	Red Robin Gourmet Burgers Inc. (NasdaqGS:RRGB)	Restaurants	United States
2010	Daemyung Corporation Co.,Ltd. (KOSDAQ:A007720)	Electronic Equipment and Instruments	South Korea
2010	Computer Sciences Corporation (NYSE:CSC)	IT Consulting and Other Services	United States
2010	Chart Industries Inc. (NasdaqGS:GTLS)	Industrial Machinery	United States
2010	HeidelbergCement AG (DB:HEI)	Construction Materials	Germany
2010	Tenneco Inc. (NYSE:TEN)	Auto Parts and Equipment	United States
2010	GKN plc (LSE:GKN)	Auto Parts and Equipment	United Kingdom
2010	Calgon Carbon Corporation (NYSE:CCC)	Commodity Chemicals	United States
2010	Incus Investor ASA (OB:INC)	Steel	Norway
2010	Vicat SA (ENXTPA:VCT)	Construction Materials	France
2010	International Paper Company (NYSE:IP)	Paper Packaging	United States
2010	Prysmian S.p.A. (BIT:PRY)	Electrical Components and Equipment	Italy
2010	Uni-Select Inc. (TSX:UNS)	Distributors	Canada
2010	Aalberts Industries NV (ENXTAM:AALB)	Industrial Machinery	Netherlands
2010	Advanced-Connectek Inc. (GTSM:5491)	Electronic Components	Taiwan
2010	Electronic Arts Inc. (NasdaqGS:EA)	Home Entertainment Software	United States
2010	Elcomtec Co., Ltd. (KOSDAQ:A037950)	Electronic Components	South Korea
2010	Imation Corp. (NYSE:IMN)	Technology Hardware, Storage and Peripherals	United States
2010	Core Logic Inc. (KOSDAQ:A048870)	Semiconductors	South Korea
2010	Belden Inc. (NYSE:BDC)	Electronic Components	United States
2010	Ciber, Inc. (NYSE:CBR)	IT Consulting and Other Services	United States
2010	STMicroelectronics NV (ENXTPA:STM)	Semiconductors	Switzerland
2010	Nordicom A/S (CPSE:NRDC)	Real Estate Development	Denmark
2010	Norske Skogindustrier ASA (OB:NSG)	Paper Products	Norway
2010	Dana Incorporated (NYSE:DAN)	Auto Parts and Equipment	United States
2010	Empire Company Limited (TSX:EMP.A)	Food Retail	Canada
2010	The Marcus Corporation (NYSE:MCS)	Hotels, Resorts and Cruise Lines	United States
2010	TCC Steel Corp. (KOSE:A002710)	Steel	South Korea
2010	Taiwan Building Materials Co., Ltd. (TSEC:2504)	Construction Materials	Taiwan
2010	Federal-Mogul Holdings Corporation (NasdaqGS:FDML)	Auto Parts and Equipment	United States
2010	Intersil Corporation (NasdaqGS:ISIL)	Semiconductors	United States
2010	Compagnie Generale DES Etablissements Michelin SCA (ENXTPA:ML)	Tires and Rubber	France
2010	Consilium AB (publ) (OM:CONS B)	Electronic Equipment and Instruments	Sweden
2010	Village Super Market Inc. (NasdaqGS:VLGE.A)	Food Retail	United States
2010	Carrols Restaurant Group, Inc. (NasdaqGS:TAST)	Restaurants	United States
2010	Japan Corporate Housing Service Inc. (TSE:8945)	Real Estate Services	Japan
2010	Orica Limited (ASX:ORI)	Commodity Chemicals	Australia
2010	Nexity S.A. (ENXTPA:NXI)	Real Estate Development	France
2010	Hills Limited (ASX:HIL)	Electronic Equipment and Instruments	Australia
2010	Neo Solar Power Corporation (TSEC:3576)	Semiconductors	Taiwan
2010	ON Semiconductor Corp. (NasdaqGS:ON)	Semiconductors	United States
2010	Tata Steel Limited (BSE:500470)	Steel	India
2010	Formula Systems (1985) Ltd. (TASE:FORTY)	IT Consulting and Other Services	Israel
2010	Cascades, Inc. (TSX:CAS)	Paper Packaging	Canada
2010	Ruixin International Holdings Limited (SEHK:724)	Semiconductors	Hong Kong
2010	Henan Pinggao Electric Co.,Ltd. (SHSE:600312)	Electrical Components and Equipment	China
2010	iCAD, Inc. (NasdaqCM:ICAD)	Health Care Technology	United States

2010	Graham Holdings Company (NYSE:GHC)	Education Services	United States
2010	H+H International A/S (CPSE:HH)	Construction Materials	Denmark
2010	R Systems International Limited (BSE:532735)	IT Consulting and Other Services	India
2010	Nucor Corporation (NYSE:NUE)	Steel	United States
2010	Macy's, Inc. (NYSE:M)	Department Stores	United States
2010	OSI Systems, Inc. (NasdaqGS:OSIS)	Electronic Equipment and Instruments	United States
2010	Wienerberger AG (WBAG:WIE)	Construction Materials	Austria
2010	John B Sanfilippo & Son Inc. (NasdaqGS:JBSS)	Packaged Foods and Meats	United States
2010	Hanyang Hitao Co., Ltd. (KOSDAQ:A064090)	Electronic Equipment and Instruments	South Korea
2010	Mueller Industries Inc. (NYSE:MLI)	Industrial Machinery	United States
2010	Infineon Technologies AG (XTRA:IFX)	Semiconductors	Germany
2010	ThyssenKrupp AG (XTRA:TKA)	Steel	Germany
2010	Eaton Corporation plc (NYSE:ETN)	Electrical Components and Equipment	Ireland
2010	Analog Devices, Inc. (NasdaqGS:ADI)	Semiconductors	United States
2010	ESCO Technologies Inc. (NYSE:ESE)	Industrial Machinery	United States
2010	EBOS Group Ltd. (NZSE:EBO)	Healthcare Distributors	Australia
2010	Cypress Semiconductor Corporation (NasdaqGS:CY)	Semiconductors	United States
2010	Lenzing Aktiengesellschaft (WBAG:LNZ)	Commodity Chemicals	Austria
2010	Darden Restaurants, Inc. (NYSE:DRI)	Restaurants	United States
2010	Tecnotree Oyj (HLSE:TEM1V)	Application Software	Finland
2010	Zetes Industries SA (ENXTBR:ZTS)	Electronic Equipment and Instruments	Belgium
2010	HBL Power Systems Limited (BSE:517271)	Electrical Components and Equipment	India
2010	RealNetworks Inc. (NasdaqGS:RNWK)	Internet Software and Services	United States
2010	Dynamic Materials Corp. (NasdaqGS:BOOM)	Industrial Machinery	United States
2010	ManTech International Corporation (NasdaqGS:MANT)	IT Consulting and Other Services	United States
2010	Enero Group Limited (ASX:EKG)	Advertising	Australia
2010	CGI Group Inc. (TSX:GIB.A)	IT Consulting and Other Services	Canada
2010	The AES Corporation (NYSE:AES)	Independent Power Producers and Energy Traders	United States
2010	PKC Group Oyj (HLSE:PKC1V)	Electrical Components and Equipment	Finland
2010	Greif, Inc. (NYSE:GEF)	Metal and Glass Containers	United States
2010	Evolis SA (ENXTPA:ALTVO)	Technology Hardware, Storage and Peripherals	France
2010	Rheinmetall AG (DB:RHM)	Industrial Conglomerates	Germany
2010	DMG Mori AG (DB:GIL)	Industrial Machinery	Germany
2010	Calpine Corp. (NYSE:CPN)	Independent Power Producers and Energy Traders	United States
2010	As One Corp. (TSE:7476)	Healthcare Distributors	Japan
2010	The Cooper Companies Inc. (NYSE:COO)	Healthcare Supplies	United States
2010	Helical plc (LSE:HLCL)	Real Estate Development	United Kingdom
2010	Kohl's Corp. (NYSE:KSS)	Department Stores	United States
2010	Next Bt Co., Ltd. (KOSDAQ:A065170)	Personal Products	South Korea
2010	Bassett Furniture Industries, Incorporated (NasdaqGS:BSET)	Home Furnishings	United States
2010	Charm Engineering Co.,Ltd. (KOSE:A009310)	Semiconductor Equipment	South Korea
2010	Crane Co. (NYSE:CR)	Industrial Machinery	United States
2010	Interpump Group SpA (BIT:IP)	Industrial Machinery	Italy
2010	Silgan Holdings Inc. (NasdaqGS:SLGN)	Metal and Glass Containers	United States
2010	B&G Foods Inc. (NYSE:BGS)	Packaged Foods and Meats	United States
2010	Layne Christensen Company (NasdaqGS:LAYN)	Construction and Engineering	United States
2010	Omniceil, Inc. (NasdaqGS:OMCL)	Health Care Technology	United States

2010	Sobha Limited (BSE:532784)	Real Estate Development	India
2010	Oxford Instruments plc (LSE:OXIG)	Electronic Equipment and Instruments	United Kingdom
2010	AngioDynamics Inc. (NasdaqGS:ANGO)	Healthcare Equipment	United States
2010	Gorenje d.d. (LJSE:GRVG)	Household Appliances	Slovenia
2011	Cemat A/S (CPSE:CEMAT)	Semiconductors	Denmark
2011	Orica Limited (ASX:ORI)	Commodity Chemicals	Australia
2011	EHWA Technologies Information Co. Ltd. (KOSDAQ:A024810)	Electrical Components and Equipment	South Korea
2011	Funcom N.V. (OB:FUNCOM)	Home Entertainment Software	Netherlands
2011	GOCL Corporation Limited (BSE:506480)	Commodity Chemicals	India
2011	Amplifon SpA (BIT:AMP)	Healthcare Distributors	Italy
2011	Teapo Electronic Corporation (TSEC:2375)	Electronic Components	Taiwan
2011	Imation Corp. (NYSE:IMN)	Technology Hardware, Storage and Peripherals	United States
2011	Mandarin Oriental International Limited (SGX:M04)	Hotels, Resorts and Cruise Lines	Hong Kong
2011	Oniva Online Group Europe AB (publ) (OM:ONG)	Internet Software and Services	Sweden
2011	Nordicom A/S (CPSE:NRDC)	Real Estate Development	Denmark
2011	ONLY corporation (TSE:3376)	Apparel, Accessories and Luxury Goods	Japan
2011	Agilysys Inc. (NasdaqGS:AGYS)	Technology Distributors	United States
2011	Taiheiyo Cement Corp. (TSE:5233)	Construction Materials	Japan
2011	Forcecon Tech. Co. Ltd (GTSM:3483)	Technology Hardware, Storage and Peripherals	Taiwan
2011	Atari société anonyme (ENXTPA:ATA)	Home Entertainment Software	France
2011	IHI Corporation (TSE:7013)	Industrial Machinery	Japan
2011	Blucora, Inc. (NasdaqGS:BCOR)	Internet Software and Services	United States
2011	PT Indonesian Paradise Property Tbk (JKSE:INPP)	Hotels, Resorts and Cruise Lines	Indonesia
2011	Sollers Public Joint Stock Company (MISX:SVAV)	Automobile Manufacturers	Russia
2011	Ordina NV (ENXTAM:ORDI)	IT Consulting and Other Services	Netherlands
2011	Novanta Inc. (NasdaqGS:NOVT)	Electronic Equipment and Instruments	United States
2011	Darfon Electronics Corporation (TSEC:8163)	Technology Hardware, Storage and Peripherals	Taiwan
2011	TTS Group ASA (OB:TTS)	Construction Machinery and Heavy Trucks	Norway
2011	Agfa-Gevaert N.V. (ENXTBR:AGFB)	Health Care Technology	Belgium
2011	Gorenje d.d. (LJSE:GRVG)	Household Appliances	Slovenia
2011	Feintool International Holding AG (SWX:FTON)	Industrial Machinery	Switzerland
2011	Daktronics Inc. (NasdaqGS:DAKT)	Electronic Equipment and Instruments	United States
2011	Sonokong Co.,Ltd. (KOSDAQ:A066910)	Leisure Products	South Korea
2011	Rheinmetall AG (DB:RHM)	Industrial Conglomerates	Germany
2011	Barunson Co.,Ltd. (KOSDAQ:A018700)	Restaurants	South Korea
2011	Capital Power Corporation (TSX:CPX)	Independent Power Producers and Energy Traders	Canada
2011	Constantin Medien AG (XTRA:EV4)	Movies and Entertainment	Germany
2011	Brinker International, Inc. (NYSE:EAT)	Restaurants	United States
2011	Ad-Sol Nissin Corporation (TSE:3837)	IT Consulting and Other Services	Japan
2011	Taisei Corporation (TSE:1801)	Construction and Engineering	Japan
2011	TAG Immobilien AG (DB:TEG)	Real Estate Development	Germany
2011	Starrag Group Holding AG (SWX:STGN)	Industrial Machinery	Switzerland
2011	Enero Group Limited (ASX:EGG)	Advertising	Australia
2011	AngioDynamics Inc. (NasdaqGS:ANGO)	Healthcare Equipment	United States
2012	K.J. Pretech Co. Ltd. (KOSDAQ:A083470)	Semiconductors	South Korea
2012	Nuvotec Co. Ltd. (KOSDAQ:A060260)	Industrial Machinery	South Korea

2012	Barunson E&A Corporation (KOSDAQ:A035620)	Home Entertainment Software	South Korea
2012	Chemtura Corporation (NYSE:CHMT)	Specialty Chemicals	United States
2012	Yashima Denki Co.,Ltd. (TSE:3153)	Electronic Equipment and Instruments	Japan
2012	Evolving Systems Inc. (NasdaqCM:EVOL)	Application Software	United States
2012	Heineken NV (ENXTAM:HEIA)	Brewers	United States
2012	Cambium Learning Group, Inc. (NasdaqCM:ABCD)	Education Services	United States
2012	Automobile & PCB Inc. (KOSE:A015260)	Auto Parts and Equipment	South Korea
2012	Ordina NV (ENXTAM:ORDI)	IT Consulting and Other Services	Netherlands
2012	REC Silicon ASA (OB:REC)	Semiconductor Equipment	Norway
2012	Take-Two Interactive Software Inc. (NasdaqGS:TTWO)	Home Entertainment Software	United States
2012	Lakeland Industries Inc. (NasdaqGM:LAKE)	Apparel, Accessories and Luxury Goods	United States
2012	MakeMyTrip Limited (NasdaqGS:MMYT)	Internet and Direct Marketing Retail	India
2012	Suzlon Energy Limited (BSE:532667)	Heavy Electrical Equipment	India
2012	Cohu, Inc. (NasdaqGS:COHU)	Semiconductor Equipment	United States
2012	Sun Corporation (JASDAQ:6736)	Leisure Products	Japan
2012	Sword Group SE (ENXTPA:SWP)	IT Consulting and Other Services	Luxembourg
2012	PAR Technology Corporation (NYSE:PAR)	Electronic Equipment and Instruments	United States
2012	Nantian Electronics Information Corp, Ltd. (SZSE:000948)	IT Consulting and Other Services	China
2012	Tongtai Machine & Tool Co., Ltd. (TSEC:4526)	Industrial Machinery	Taiwan
2012	LG Electronics Inc. (KOSE:A066570)	Consumer Electronics	South Korea
2012	Gokaldas Exports Ltd. (BSE:532630)	Apparel, Accessories and Luxury Goods	India
2012	Career Education Corp. (NasdaqGS:CECO)	Education Services	United States
2012	Yoshinoya Holdings Co., Ltd. (TSE:9861)	Restaurants	Japan
2012	TechMatrix Corporation (TSE:3762)	IT Consulting and Other Services	Japan
2012	Ampco-Pittsburgh Corp. (NYSE:AP)	Steel	United States
2012	Advanced Micro Devices, Inc. (NasdaqCM:AMD)	Semiconductors	United States
2012	The Marcus Corporation (NYSE:MCS)	Hotels, Resorts and Cruise Lines	United States
2012	Affecto Oyj (HLSE:AFE1V)	IT Consulting and Other Services	Finland
2012	ED Co., Ltd. (KOSDAQ:A033110)	Electronic Equipment and Instruments	South Korea
2012	Teradyne Inc. (NYSE:TER)	Semiconductor Equipment	United States
2012	StatPro Group plc (AIM:SOG)	Application Software	United Kingdom
2012	WONIK Co., LTD. (KOSDAQ:A032940)	Healthcare Distributors	South Korea
2012	USA Technologies Inc. (NasdaqGM:USAT)	Technology Hardware, Storage and Peripherals	United States
2012	Arrow Greentech Limited (BSE:516064)	Paper Packaging	India
2012	Semtech Corporation (NasdaqGS:SMTC)	Semiconductors	United States
2012	Farmer Brothers Co. (NasdaqGS:FARM)	Packaged Foods and Meats	United States
2012	Orica Limited (ASX:ORI)	Commodity Chemicals	Australia
2012	Jess-link Products Co., Ltd. (TSEC:6197)	Technology Hardware, Storage and Peripherals	Taiwan
2012	RTI Surgical Inc. (NasdaqGS:RTIX)	Healthcare Supplies	United States
2012	Kisoji Co., Ltd. (TSE:8160)	Restaurants	Japan
2012	Lenzing Aktiengesellschaft (WBAG:LNZ)	Commodity Chemicals	Austria
2013	Take-Two Interactive Software Inc. (NasdaqGS:TTWO)	Home Entertainment Software	United States
2013	NN Inc. (NasdaqGS:NNBR)	Industrial Machinery	United States
2013	Chemtura Corporation (NYSE:CHMT)	Specialty Chemicals	United States
2013	NKT Holding A/S (CPSE:NKT)	Industrial Machinery	Denmark
2013	YD Online Corp. (KOSDAQ:A052770)	Home Entertainment Software	South Korea
2013	SkyWest Inc. (NasdaqGS:SKYW)	Airlines	United States

2013	C.I. Group Public Company Limited (SET:CIG)	Electronic Components	Thailand
2013	Core Logic Inc. (KOSDAQ:A048870)	Semiconductors	South Korea
2013	RealNetworks Inc. (NasdaqGS:RNWK)	Internet Software and Services	United States
2013	Cohu, Inc. (NasdaqGS:COHU)	Semiconductor Equipment	United States
2013	GCL New Energy Holdings Limited (SEHK:451)	Electronic Components	Hong Kong
2013	Star Comgistic Capital Co., Ltd. (TSEC:4930)	Household Appliances	Taiwan
2013	Sansha Electric Manufacturing Co., Ltd. (TSE:6882)	Electrical Components and Equipment	Japan
2013	Elica SpA (BIT:ELC)	Household Appliances	Italy
2013	Autoline Industries Limited (BSE:532797)	Auto Parts and Equipment	India
2013	Marchex, Inc. (NasdaqGS:MCHX)	Internet Software and Services	United States
2013	HP Inc. (NYSE:HPQ)	Technology Hardware, Storage and Peripherals	United States
2013	Gokaldas Exports Ltd. (BSE:532630)	Apparel, Accessories and Luxury Goods	India
2013	j-Group Holdings Corp. (TSE:3063)	Restaurants	Japan
2013	OMNOVA Solutions Inc. (NYSE:OMN)	Specialty Chemicals	United States
2013	Lincoln Educational Services Corporation (NasdaqGS:LINC)	Education Services	United States
2013	Schnell Biopharmaceuticals, Inc. (KOSE:A003060)	Pharmaceuticals	South Korea
2013	Essen Tech Co. Ltd. (KOSDAQ:A043340)	Industrial Machinery	South Korea
2013	G-Smatt Global Co., Ltd. (KOSDAQ:A114570)	Semiconductors	South Korea
2013	Whirlpool Corp. (NYSE:WHR)	Household Appliances	United States
2013	Clover Hitech Co., Ltd. (KOSDAQ:A043590)	Electronic Components	South Korea
2013	Heineken NV (ENXTAM:HEIA)	Brewers	United States
2013	Nojima Corporation (TSE:7419)	Computer and Electronics Retail	Japan
2013	Entegris, Inc. (NasdaqGS:ENTG)	Semiconductor Equipment	United States
2013	JoyCity Corporation (KOSDAQ:A067000)	Home Entertainment Software	South Korea
2013	QST International Corp. (GTSM:8349)	Industrial Machinery	Taiwan
2013	Universal Corporation (NYSE:UVV)	Tobacco	United States
2013	Vectura Group plc (LSE:VEC)	Pharmaceuticals	United Kingdom
2013	Cap Gemini S.A. (ENXTPA:CAP)	IT Consulting and Other Services	France
2013	Sovereign Food Investments Limited (JSE:SOV)	Packaged Foods and Meats	South Africa
2013	Nice SpA (BIT:NICE)	Electronic Equipment and Instruments	Italy
2013	Yamashita Medical Instruments Co.,Ltd. (TSE:3022)	Healthcare Distributors	Japan
2013	Poplar Co., Ltd. (TSE:7601)	Food Retail	Japan
2013	Oscotec Inc. (KOSDAQ:A039200)	Pharmaceuticals	South Korea
2013	Look Incorporated (TSE:8029)	Apparel, Accessories and Luxury Goods	Japan
2013	Xtep International Holdings Limited (SEHK:1368)	Apparel, Accessories and Luxury Goods	China
2013	Centron Telecom International Holding Ltd. (SEHK:1155)	Communications Equipment	Hong Kong
2013	IRIS Corporation Berhad (KLSE:IRIS)	Application Software	Malaysia
2013	Affecto Oyj (HLSE:AFE1V)	IT Consulting and Other Services	Finland
2013	Leader Electronics, Inc. (TSEC:3058)	Electrical Components and Equipment	Taiwan
2013	StatPro Group plc (AIM:SOG)	Application Software	United Kingdom
2013	Graham Holdings Company (NYSE:GHC)	Education Services	United States
2013	ArcelorMittal (ENXTAM:MT)	Steel	Luxembourg
2013	Amer Sports Corp. (HLSE:AMEAS)	Leisure Products	Finland
2013	Liquor Stores NA Ltd (TSX:LIQ)	Food Retail	Canada
2013	Fujibo Holdings, Inc. (TSE:3104)	Textiles	Japan
2013	DST Robot Co., Ltd. (KOSDAQ:A090710)	Industrial Machinery	South Korea
2013	BEML Limited (BSE:500048)	Construction Machinery and Heavy Trucks	India

2013	Low & Bonar plc (LSE:LWB)	Construction Materials	United Kingdom
2013	V1 Group Limited (SEHK:82)	Application Software	Hong Kong
2013	Internet Gold Golden Lines Ltd. (NasdaqGS:IGLD)	Integrated Telecommunication Services	Israel
2013	Zappallas, Inc. (TSE:3770)	Internet Software and Services	Japan
2013	Atos SE (ENXTPA:ATO)	IT Consulting and Other Services	France
2013	Schneider Electric SE (ENXTPA:SU)	Electrical Components and Equipment	France
2013	TechMatrix Corporation (TSE:3762)	IT Consulting and Other Services	Japan
2013	Densan System Co.,Ltd. (TSE:3630)	IT Consulting and Other Services	Japan
2013	Calgon Carbon Corporation (NYSE:CCC)	Commodity Chemicals	United States
2013	Nuance Communications, Inc. (NasdaqGS:NUAN)	Application Software	United States
2013	Melbourne IT Ltd. (ASX:MLB)	Internet Software and Services	Australia
2013	Compagnie Generale DES Etablissements Michelin SCA (ENXTPA:ML)	Tires and Rubber	France
2013	Quad/Graphics, Inc. (NYSE:QUAD)	Commercial Printing	United States
2013	Office Depot, Inc. (NasdaqGS:ODP)	Specialty Stores	United States
2014	Sansha Electric Manufacturing Co., Ltd. (TSE:6882)	Electrical Components and Equipment	Japan
2014	MeetMe, Inc. (NasdaqCM:MEET)	Internet Software and Services	United States
2014	OMNOVA Solutions Inc. (NYSE:OMN)	Specialty Chemicals	United States
2014	Dana Incorporated (NYSE:DAN)	Auto Parts and Equipment	United States
2014	IQ Group Holdings Berhad (KLSE:IQGROUP)	Electronic Equipment and Instruments	Malaysia
2014	Deco-netishion Co., Ltd. (KOSDAQ:A017680)	Apparel, Accessories and Luxury Goods	South Korea
2014	Sato Restaurant Systems Co., Ltd. (TSE:8163)	Restaurants	Japan
2014	Funtastic Ltd. (ASX:FUN)	Distributors	Australia
2014	Amplifon SpA (BIT:AMP)	Healthcare Distributors	Italy
2014	CEAT Limited (BSE:500878)	Tires and Rubber	India
2014	Takagi Seiko Corporation (JASDAQ:4242)	Industrial Machinery	Japan
2014	Wistron Corporation (TSEC:3231)	Technology Hardware, Storage and Peripherals	Taiwan
2014	IDIS Holdings Co., Ltd. (KOSDAQ:A054800)	Electronic Equipment and Instruments	South Korea
2014	ShiDax Corp. (JASDAQ:4837)	Restaurants	Japan
2014	Taihan Electric Wire Co., Ltd. (KOSE:A001440)	Electrical Components and Equipment	South Korea
2014	Corona Corporation (TSE:5909)	Household Appliances	Japan
2014	Veeco Instruments Inc. (NasdaqGS:VECO)	Semiconductor Equipment	United States
2014	Acer Incorporated (TSEC:2353)	Technology Hardware, Storage and Peripherals	Taiwan
2014	SDN Company Limited (KOSDAQ:A099220)	Electrical Components and Equipment	South Korea
2014	Cooper Tire & Rubber Co. (NYSE:CTB)	Tires and Rubber	United States
2014	JK Tyre & Industries Limited (BSE:530007)	Tires and Rubber	India
2014	QuinStreet, Inc. (NasdaqGS:QNST)	Internet Software and Services	United States
2014	Mobile Telecommunications Company Saudi Arabia (SASE:7030)	Wireless Telecommunication Services	Saudi Arabia
2014	RealNetworks Inc. (NasdaqGS:RNWK)	Internet Software and Services	United States
2014	Playtech plc (LSE:PTEC)	Home Entertainment Software	Isle of Man
2014	The Goodyear Tire & Rubber Company (NasdaqGS:GT)	Tires and Rubber	United States
2014	Daito Pharmaceutical Co., Ltd. (TSE:4577)	Pharmaceuticals	Japan
2014	ManTech International Corporation (NasdaqGS:MANT)	IT Consulting and Other Services	United States
2014	Tai-Saw Technology Co., Ltd. (GTSM:3221)	Electronic Components	Taiwan
2014	Korea Development Corporation Co., Ltd. (KOSE:A004200)	Construction and Engineering	South Korea
2014	Support.com, Inc. (NasdaqCM:SPRT)	Internet Software and Services	United States
2014	CACI International Inc. (NYSE:CACI)	IT Consulting and Other Services	United States
2014	Toyobo Co., Ltd. (TSE:3101)	Commodity Chemicals	Japan

2014	Accell Group NV (ENXTAM:ACCEL)	Leisure Products	Netherlands
2014	ID Systems Inc. (NasdaqGM:IDSY)	Electronic Equipment and Instruments	United States
2014	HanbitSoft, Inc. (KOSDAQ:A047080)	Home Entertainment Software	South Korea
2014	TomTom NV (ENXTAM:TOM2)	Consumer Electronics	Netherlands
2014	Terasaki Electric Co., Ltd. (JASDAQ:6637)	Electrical Components and Equipment	Japan
2014	Federal-Mogul Holdings Corporation (NasdaqGS:FDML)	Auto Parts and Equipment	United States
2014	Medius Holdings Co., Ltd. (TSE:3154)	Healthcare Distributors	Japan
2014	SBW, Inc. (KOSE:A102280)	Apparel, Accessories and Luxury Goods	South Korea
2014	XO Group Inc. (NYSE:XOXO)	Internet Software and Services	United States
2014	Kraton Corporation (NYSE:KRA)	Specialty Chemicals	United States
2014	Bankrate, Inc. (NYSE:RATE)	Internet Software and Services	United States
2014	Kyowa Electronic Instruments Co. Ltd. (TSE:6853)	Electronic Equipment and Instruments	Japan
2014	CUI Global, Inc. (NasdaqCM:CUI)	Electronic Equipment and Instruments	United States
2014	Techno Mathematical Co., Ltd. (TSE:3787)	Application Software	Japan
2014	Imagica Robot Holdings Inc. (TSE:6879)	Application Software	Japan
2014	Identiv, Inc. (NasdaqCM:INVE)	Electronic Equipment and Instruments	United States
2014	Zappallas, Inc. (TSE:3770)	Internet Software and Services	Japan
2014	Ebix Inc. (NasdaqGS:EBIX)	Application Software	United States
2014	Ebara Corp. (TSE:6361)	Industrial Machinery	Japan
2014	Halla Holdings Corp. (KOSE:A060980)	Auto Parts and Equipment	South Korea
2014	Rexnord Corporation (NYSE:RXN)	Industrial Machinery	United States
2014	S&T AG (XTRA:SANT)	Technology Hardware, Storage and Peripherals	Austria
2014	SeaChange International, Inc. (NasdaqGS:SEAC)	Application Software	United States
2014	Suedzucker AG (DB:SZU)	Packaged Foods and Meats	Germany
2014	Smurfit Kappa Group plc (ISE:SK3)	Paper Packaging	Ireland
2014	Cypress Semiconductor Corporation (NasdaqGS:CY)	Semiconductors	United States
2014	Computer Sciences Corporation (NYSE:CSC)	IT Consulting and Other Services	United States
2014	Norske Skogindustrier ASA (OB:NSG)	Paper Products	Norway
2014	Sears Holdings Corporation (NasdaqGS:SHLD)	Department Stores	United States
2014	Harvard Bioscience Inc. (NasdaqGM:HBIO)	Life Sciences Tools and Services	United States
2014	DMG Mori AG (DB:GIL)	Industrial Machinery	Germany
2014	Nojima Corporation (TSE:7419)	Computer and Electronics Retail	Japan
2014	Daktronics Inc. (NasdaqGS:DAKT)	Electronic Equipment and Instruments	United States
2014	H+H International A/S (CPSE:HH)	Construction Materials	Denmark
2014	Thai Polycons Public Company Limited (SET:TPOLY)	Construction and Engineering	Thailand
2014	B L Kashyap & Sons Limited (BSE:532719)	Construction and Engineering	India
2014	International Shipholding Corp. (OTCPK:ISHC.Q)	Marine	United States
2014	Martinrea International Inc. (TSX:MRE)	Auto Parts and Equipment	Canada
2014	TechMatrix Corporation (TSE:3762)	IT Consulting and Other Services	Japan
2014	QoI Co., Ltd. (TSE:3034)	Drug Retail	Japan
2014	Altran Technologies S.A. (ENXTPA:ALT)	IT Consulting and Other Services	France
2014	Bang & Olufsen a/s (CPSE:BO)	Consumer Electronics	Denmark
2014	Weyco Group Inc. (NasdaqGS:WEYS)	Distributors	United States
2014	Sun-Wa Technos Corporation (TSE:8137)	Technology Distributors	Japan
2014	Yonghui Superstores Co., Ltd. (SHSE:601933)	Hypermarkets and Super Centers	China
2014	Vicat SA (ENXTPA:VCT)	Construction Materials	France
2014	Elecom Co., Ltd. (TSE:6750)	Technology Hardware, Storage and Peripherals	Japan

2014	Akzo Nobel N.V. (ENXTAM:AKZA)	Specialty Chemicals	Netherlands
2014	Internet Gold Golden Lines Ltd. (NasdaqGS:IGLD)	Integrated Telecommunication Services	Israel
2014	Booz Allen Hamilton Holding Corporation (NYSE:BAH)	IT Consulting and Other Services	United States
2014	Synopsys Inc. (NasdaqGS:SNPS)	Application Software	United States
2014	Belships ASA (OB:BEL)	Marine	Norway
2014	Nextbio Holdings Co., Ltd. (KOSDAQ:A051980)	Communications Equipment	South Korea
2014	Calgon Carbon Corporation (NYSE:CCC)	Commodity Chemicals	United States
2014	Jeol Ltd. (TSE:6951)	Healthcare Equipment	Japan
2014	Harte-Hanks Inc. (NYSE:HHS)	Advertising	United States
2014	Snyder's-Lance, Inc. (NasdaqGS:LNCE)	Packaged Foods and Meats	United States
2014	CSA Cosmic Co., Ltd. (KOSDAQ:A083660)	Industrial Machinery	South Korea
2014	Fairpoint Group plc (AIM:FRP)	Specialized Consumer Services	United Kingdom
2014	OC Oerlikon Corporation AG (SWX:OERL)	Industrial Machinery	Switzerland
2014	Vascon Engineers Ltd (NSEI:VASCONEQ)	Construction and Engineering	India
2014	PT Pan Brothers Tbk (JKSE:PBRX)	Apparel, Accessories and Luxury Goods	Indonesia
2014	Maxnerva Technology Services Limited (SEHK:1037)	Technology Distributors	Hong Kong
2014	Hub Co., Ltd. (JASDAQ:3030)	Restaurants	Japan
2014	JMC Projects (India) Ltd. (BSE:522263)	Construction and Engineering	India
2014	Zumtobel Group AG (WBAG:ZAG)	Electrical Components and Equipment	Austria
2014	Toray Chemical Korea Inc. (KOSE:A008000)	Textiles	South Korea
2015	Maruwa Co., Ltd. (TSE:5344)	Electronic Components	Japan
2015	Ordina NV (ENXTAM:ORDI)	IT Consulting and Other Services	Netherlands
2015	Crucialtec Co., Ltd. (KOSDAQ:A114120)	Electronic Components	South Korea
2015	BlackBerry Limited (TSX:BB)	Technology Hardware, Storage and Peripherals	Canada
2015	Gokaldas Exports Ltd. (BSE:532630)	Apparel, Accessories and Luxury Goods	India
2015	DMG Mori AG (DB:GIL)	Industrial Machinery	Germany
2015	Rheinmetall AG (DB:RHM)	Industrial Conglomerates	Germany
2015	Formpipe Software AB (OM:FPIP)	Application Software	Sweden
2015	Gorenje d.d. (LJSE:GRVG)	Household Appliances	Slovenia
2015	Ajisen China Holdings Ltd. (SEHK:538)	Restaurants	Hong Kong
2015	Vascon Engineers Ltd (NSEI:VASCONEQ)	Construction and Engineering	India
2015	Hirata Corporation (JASDAQ:6258)	Industrial Machinery	Japan
2015	SamwooEms co., Ltd (KOSDAQ:A082660)	Electronic Components	South Korea
2015	Aichi Tokei Denki Co., Ltd. (TSE:7723)	Electronic Equipment and Instruments	Japan
2015	Meiwa Industry Co., Ltd. (TSE:7284)	Auto Parts and Equipment	Japan
2015	Universal Cables, Ltd. (BSE:504212)	Electrical Components and Equipment	India
2015	First Solar, Inc. (NasdaqGS:FSLR)	Semiconductors	United States
2015	Woongjin Co., Ltd. (KOSE:A016880)	Industrial Conglomerates	South Korea
2015	Kyowa Electronic Instruments Co. Ltd. (TSE:6853)	Electronic Equipment and Instruments	Japan
2015	Synopex Inc. (KOSDAQ:A025320)	Electronic Components	South Korea
2015	ALBIS Co.,Ltd. (TSE:7475)	Food Retail	Japan
2015	Ampire Co., Ltd. (GTSM:8049)	Semiconductors	Taiwan
2015	Novanta Inc. (NasdaqGS:NOVT)	Electronic Equipment and Instruments	United States
2015	Medius Holdings Co., Ltd. (TSE:3154)	Healthcare Distributors	Japan
2015	Terasaki Electric Co., Ltd. (JASDAQ:6637)	Electrical Components and Equipment	Japan
2015	SolarWorld AG (XTRA:SWVK)	Semiconductors	Germany
2015	Kirloskar Electric Company Limited (BSE:533193)	Electrical Components and Equipment	India
2015	Rubik Financial Limited (ASX:RFL)	IT Consulting and Other Services	Australia

2015	Acer Incorporated (TSEC:2353)	Technology Hardware, Storage and Peripherals	Taiwan
2015	HCL Infosystems Limited (BSE:500179)	IT Consulting and Other Services	India
2015	Noda Corporation (TSE:7879)	Building Products	Japan
2015	Teradyne Inc. (NYSE:TER)	Semiconductor Equipment	United States
2015	Magic Technology Co., Ltd. (GTSM:5255)	Electronic Components	Taiwan
2015	Ignite Restaurant Group, Inc. (NasdaqGS:IRG)	Restaurants	United States
2015	Clover Hitech Co., Ltd. (KOSDAQ:A043590)	Electronic Components	South Korea
2015	Johnson Outdoors Inc. (NasdaqGS:JOUT)	Leisure Products	United States
2015	Poulina Group Holding S.A. (BVMT:PGH)	Industrial Conglomerates	Tunisia
2015	Nanometrics Incorporated (NasdaqGS:NANO)	Semiconductor Equipment	United States
2015	HB Technology Co., Ltd. (KOSDAQ:A078150)	Semiconductor Equipment	South Korea
2015	Covisint Corporation (NasdaqGS:COVS)	Systems Software	United States
2015	Profarma Distribuidora de Produtos Farmacêuticos S.A. (BOVESPA:PFRM3)	Healthcare Distributors	Brazil
2015	Computer Sciences Corporation (NYSE:CSC)	IT Consulting and Other Services	United States
2015	Kiri Industries Limited (BSE:532967)	Specialty Chemicals	India
2015	TechMatrix Corporation (TSE:3762)	IT Consulting and Other Services	Japan
2015	TONGYANG NETWORKS Corporation (KOSE:A030790)	IT Consulting and Other Services	South Korea
2015	Electronics for Imaging, Inc. (NasdaqGS:EFII)	Technology Hardware, Storage and Peripherals	United States
2015	J. C. Penney Company, Inc. (NYSE:JCP)	Department Stores	United States
2015	Yamaha Motor Co. Ltd. (TSE:7272)	Motorcycle Manufacturers	Japan
2015	MOCON Inc. (NasdaqGM:MOCO)	Electronic Equipment and Instruments	United States
2015	Playtech plc (LSE:PTEC)	Home Entertainment Software	Isle of Man
2015	ACHEM Technology Corporation (TSEC:1715)	Specialty Chemicals	Taiwan
2015	Teikoku Electric Mfg.Co.,Ltd. (TSE:6333)	Industrial Machinery	Japan
2015	Hagiwara Electric Co., Ltd. (TSE:7467)	Technology Distributors	Japan
2015	Liquor Stores NA Ltd (TSX:LIQ)	Food Retail	Canada
2015	Perficient Inc. (NasdaqGS:PRFT)	IT Consulting and Other Services	United States
2015	Elica SpA (BIT:ELC)	Household Appliances	Italy
2015	Looser Holding AG (SWX:LOHN)	Specialty Chemicals	Switzerland
2015	StrongPoint ASA (OB:STRONG)	Electronic Equipment and Instruments	Norway
2015	Enero Group Limited (ASX:EGG)	Advertising	Australia
2015	Digital Garage, Inc. (TSE:4819)	IT Consulting and Other Services	Japan
2015	Nisshin Steel Co., Ltd. (TSE:5413)	Steel	Japan
2015	TomTom NV (ENXTAM:TOM2)	Consumer Electronics	Netherlands
2015	Grange Resources Limited (ASX:GRR)	Steel	Australia
2015	Graham Corporation (NYSE:GHM)	Industrial Machinery	United States
2015	DAIHAN Scientific Co., Ltd. (KOSDAQ:A131220)	Electronic Equipment and Instruments	South Korea
2015	Hansol SeenTec Co., Ltd. (KOSDAQ:A099660)	Industrial Machinery	South Korea
2015	Escalade Inc. (NasdaqGM:ESCA)	Leisure Products	United States
2015	Thermon Group Holdings, Inc. (NYSE:THR)	Electrical Components and Equipment	United States
2015	SCSK Corporation (TSE:9719)	IT Consulting and Other Services	Japan
2015	Lafuma SA (ENXTPA:LAF)	Leisure Products	France
2015	Merus Labs International Inc. (TSX:MSL)	Pharmaceuticals	Canada
2015	RENESAS EASTON Co., Ltd. (TSE:9995)	Technology Distributors	Japan
2015	Colowide Co., Ltd. (TSE:7616)	Restaurants	Japan
2015	IQ Group Holdings Berhad (KLSE:IQGROUP)	Electronic Equipment and Instruments	Malaysia
2015	Mobotix AG (DB:MBQ)	Electronic Equipment and Instruments	Germany

2015	Autoneum Holding AG (SWX:AUTN)	Auto Parts and Equipment	Switzerland
2015	Cascades, Inc. (TSX:CAS)	Paper Packaging	Canada
2015	China Yuchai International Limited (NYSE:CYD)	Construction Machinery and Heavy Trucks	Singapore
2015	GKN plc (LSE:GKN)	Auto Parts and Equipment	United Kingdom
2015	NH Hotel Group, S.A. (BME:NHH)	Hotels, Resorts and Cruise Lines	Spain
2015	Albemarle Corporation (NYSE:ALB)	Specialty Chemicals	United States
2015	H+H International A/S (CPSE:HH)	Construction Materials	Denmark
2015	Calgon Carbon Corporation (NYSE:CCC)	Commodity Chemicals	United States
2015	Prysmian S.p.A. (BIT:PRY)	Electrical Components and Equipment	Italy
2015	ReaLy Development & Construction Corp. (GTSM:2596)	Diversified Real Estate Activities	Taiwan
2015	CGI Group Inc. (TSX:GIB.A)	IT Consulting and Other Services	Canada
2015	EMCORE Corporation (NasdaqGM:EMKR)	Communications Equipment	United States
2015	Sun Corporation (JASDAQ:6736)	Leisure Products	Japan
2015	Nextbio Holdings Co., Ltd. (KOSDAQ:A051980)	Communications Equipment	South Korea
2015	Alliance One International, Inc. (NYSE:AOI)	Tobacco	United States
2015	iPass Inc. (NasdaqGS:IPAS)	Internet Software and Services	United States
2015	Mobimo Holding AG (SWX:MOBN)	Diversified Real Estate Activities	Switzerland
2015	ASBISc Enterprises Plc (WSE:ASB)	Technology Distributors	Cyprus
2016	Redflex Holdings Limited (ASX:RDF)	Electronic Equipment and Instruments	Australia
2016	Formpipe Software AB (OM:FPIP)	Application Software	Sweden
2016	Fujikura Kasei Co., Ltd. (TSE:4620)	Specialty Chemicals	Japan
2016	Joyful Honda Co., Ltd. (TSE:3191)	Home Improvement Retail	Japan
2016	NKT A/S (CPSE:NKT)	Electrical Components and Equipment	Denmark
2016	Suedzucker AG (DB:SZU)	Packaged Foods and Meats	Germany
2016	NKT Holding A/S (CPSE:NKT)	Industrial Machinery	Denmark
2016	QIAGEN N.V. (NYSE:QGEN)	Life Sciences Tools and Services	Netherlands
2016	Kraton Corporation (NYSE:KRA)	Specialty Chemicals	United States
2016	Quidel Corp. (NasdaqGS:QDEL)	Healthcare Supplies	United States
2016	Imperial Brands PLC (LSE:IMB)	Tobacco	United Kingdom
2016	Hankuk Carbon Co., Ltd. (KOSE:A017960)	Commodity Chemicals	South Korea
2016	BAUER Aktiengesellschaft (XTRA:B5A)	Construction and Engineering	Germany
2016	Gujarat Industries Power Co. Ltd. (BSE:517300)	Independent Power Producers and Energy Traders	India
2016	Norcros plc (LSE:NXR)	Building Products	United Kingdom
2016	Panoramic Resources Limited (ASX:PAN)	Diversified Metals and Mining	Australia
2016	DX (Group) plc (AIM:DX.)	Air Freight and Logistics	United Kingdom
2016	Felissimo Corporation (TSE:3396)	Internet and Direct Marketing Retail	Japan
2016	Boom Logistics Limited (ASX:BOL)	Trading Companies and Distributors	Australia
2016	Universal Corporation (NYSE:UVV)	Tobacco	United States
2016	Eidai Co.,Ltd. (TSE:7822)	Building Products	Japan
2016	Onamba Co., Ltd. (TSE:5816)	Electrical Components and Equipment	Japan
2016	Prodware (ENXTPA:ALPRO)	IT Consulting and Other Services	France
2016	NF Corporation (JASDAQ:6864)	Electronic Equipment and Instruments	Japan
2016	StatPro Group plc (AIM:SOG)	Application Software	United Kingdom
2016	K&S Corporation Limited (ASX:KSC)	Air Freight and Logistics	Australia
2016	China Starch Holdings Limited (SEHK:3838)	Packaged Foods and Meats	Hong Kong
2016	Findel plc (LSE:FDL)	Internet and Direct Marketing Retail	United Kingdom
2016	Capxon International Electronic Company Limited (SEHK:469)	Electronic Components	Hong Kong

2016	Aichi Tokei Denki Co., Ltd. (TSE:7723)	Electronic Equipment and Instruments	Japan
2016	Singamas Container Holdings Limited (SEHK:716)	Industrial Machinery	Hong Kong
2016	Capral Limited (ASX:CAA)	Aluminum	Australia
2016	Sunfonda Group Holdings Limited (SEHK:1771)	Automotive Retail	China
2016	Zhongsheng Group Holdings Limited (SEHK:881)	Automotive Retail	China
2016	Healthway Medical Corporation Limited (Catalist:5NG)	Healthcare Services	Singapore
2016	Ascent Capital Group, Inc. (NasdaqGS:ASCM.A)	Specialized Consumer Services	United States
2016	McPherson's Limited (ASX:MCP)	Housewares and Specialties	Australia
2016	Bharat Heavy Electricals Limited (BSE:500103)	Heavy Electrical Equipment	India
2016	Beijing Yanjing Brewery Co., Ltd. (SZSE:000729)	Brewers	China
2016	Shidax Corporation (JASDAQ:4837)	Restaurants	Japan
2016	Pharmarise Holdings Corporation (TSE:2796)	Drug Retail	Japan
2016	Pasona Group Inc. (TSE:2168)	Human Resource and Employment Services	Japan
2016	Safilo Group S.p.A. (BIT:SFL)	Apparel, Accessories and Luxury Goods	Italy
2016	Beijing Shunxin Agriculture Co.,Ltd (SZSE:000860)	Distillers and Vintners	China
2016	Everest Kanto Cylinder Limited (BSE:532684)	Metal and Glass Containers	India
2016	The PAS Group Limited (ASX:PGR)	Apparel Retail	Australia
2016	Produce Investments PLC (AIM:PIL)	Packaged Foods and Meats	United Kingdom
2016	Downer EDI Limited (ASX:DOW)	Diversified Support Services	Australia
2016	Aurotek Corporation (TSEC:6215)	Electronic Equipment and Instruments	Taiwan
2016	Alpen Co., Ltd. (TSE:3028)	Specialty Stores	Japan
2016	Alliance Aviation Services Limited (ASX:AQZ)	Airlines	Australia
2016	Tenfu (Cayman) Holdings Company Limited (SEHK:6868)	Packaged Foods and Meats	China
2016	Dongkook Ind.Co.,Ltd (KOSE:A001620)	Auto Parts and Equipment	South Korea
2016	Baosheng Science and Technology Innovation Co.,Ltd. (SHSE:600973)	Electrical Components and Equipment	China
2016	Glacier Media Inc. (TSX:GVC)	Publishing	Canada
2016	Intelligent Digital Integrated Security Co., Ltd. (KOSDAQ:A143160)	Electronic Equipment and Instruments	South Korea
2016	Perry Ellis International, Inc. (NasdaqGS:PERY)	Apparel, Accessories and Luxury Goods	United States
2016	Nasstar plc (AIM:NASA)	Internet Software and Services	United Kingdom
2016	System Research Co.,Ltd. (TSE:3771)	Internet Software and Services	Japan
2016	Nippon Shokubai Co. Ltd. (TSE:4114)	Specialty Chemicals	Japan
2016	Ercros, S.A. (BME:ECR)	Commodity Chemicals	Spain
2016	A-Tech Solution Co., Ltd. (KOSDAQ:A071670)	Industrial Machinery	South Korea
2016	Ambra S.A. (WSE:AMB)	Distillers and Vintners	Poland
2016	Beijing Shunxin Agriculture Co., Ltd. (SZSE:000860)	Packaged Foods and Meats	China
2016	BHP Billiton plc (LSE:BLT)	Diversified Metals and Mining	United Kingdom
2016	RENESAS EASTON Co., Ltd. (TSE:9995)	Technology Distributors	Japan
2016	IDEC Corporation (TSE:6652)	Electrical Components and Equipment	Japan
2016	Arata Corporation (TSE:2733)	Distributors	Japan
2016	Sun-Wa Technos Corporation (TSE:8137)	Technology Distributors	Japan
2016	iEnergizer Limited (AIM:IBPO)	Data Processing and Outsourced Services	Channel Islands
2016	Organización Cultiba, S.A.B. de C.V. (BMV:CULTIBA B)	Soft Drinks	Mexico
2016	TransGlobe Energy Corporation (NasdaqGS:TGA)	Oil and Gas Exploration and Production	Canada
2016	Nihon Plast Co., Ltd. (TSE:7291)	Auto Parts and Equipment	Japan
2016	Aurea SA (ENXTPA:AURE)	Environmental and Facilities Services	France
2016	Broadband Tower, Inc. (JASDAQ:3776)	IT Consulting and Other Services	Japan
2016	Veeco Instruments Inc. (NasdaqGS:VECO)	Semiconductor Equipment	United States

2016	Vetoquinol SA (ENXTPA:VETO)	Pharmaceuticals	France
2016	Vivimed Labs Limited (BSE:532660)	Specialty Chemicals	India
2016	Village Vanguard CO.,LTD. (JASDAQ:2769)	Specialty Stores	Japan
2016	Ecology & Environment, Inc. (NasdaqGM:EEL)	Environmental and Facilities Services	United States
2016	Yokogawa Electric Corp. (TSE:6841)	Electronic Equipment and Instruments	Japan
2016	TS TECH Co., Ltd. (TSE:7313)	Auto Parts and Equipment	Japan
2016	Famous Dave's of America, Inc. (NasdaqGS:DAVE)	Restaurants	United States
2016	Topfield Co., Ltd. (KOSDAQ:A057880)	Consumer Electronics	South Korea
2016	Japan Corporate Housing Service Inc. (TSE:8945)	Real Estate Services	Japan
2016	Kwang Myung Electric Co.,Ltd (KOSE:A017040)	Electrical Components and Equipment	South Korea
2016	Konoike Transport Co., Ltd. (TSE:9025)	Air Freight and Logistics	Japan
2016	Firstgroup plc (LSE:FGP)	Trucking	United Kingdom
2016	Guangdong Goworld Co., Ltd. (SZSE:000823)	Electronic Components	China
2016	Ruralco Holdings Limited (ASX:RHL)	Distributors	Australia
2016	Aeffe S.p.A. (BIT:AEF)	Apparel, Accessories and Luxury Goods	Italy
2016	Handok Inc. (KOSE:A002390)	Pharmaceuticals	South Korea
2016	Okuma Corporation (TSE:6103)	Industrial Machinery	Japan
2016	Tongtai Machine & Tool Co., Ltd. (TSEC:4526)	Industrial Machinery	Taiwan
2016	Componenta Corp. (HLSE:CTH1V)	Industrial Machinery	Finland
2016	Snu Precision Co Ltd (KOSDAQ:A080000)	Electronic Equipment and Instruments	South Korea
2016	Nexans Société Anonyme (ENXTPA:NEX)	Electrical Components and Equipment	France
2016	AU Optronics Corp. (TSEC:2409)	Electronic Components	Taiwan
2016	Korea Engineering Consultants Corp. (KOSE:A023350)	Construction and Engineering	South Korea
2016	Y.S.P. Southeast Asia Holding Berhad (KLSE:YSPSAH)	Pharmaceuticals	Malaysia
2016	Pöyry PLC (HLSE:POY1V)	Research and Consulting Services	Finland
2016	PPAP Automotive Limited (BSE:532934)	Auto Parts and Equipment	India
2016	Positivo Tecnologia S.A. (BOVESPA:POSI3)	Technology Hardware, Storage and Peripherals	Brazil
2016	Lumens Co., Ltd. (KOSDAQ:A038060)	Semiconductors	South Korea
2016	PT Mitra Pinasthika Mustika Tbk (IDX:MPMX)	Automotive Retail	Indonesia
2016	Nice S.p.A. (BIT:NICE)	Electronic Equipment and Instruments	Italy
2016	SFC Co.,Ltd. (KOSDAQ:A112240)	Commodity Chemicals	South Korea
2016	Yushiro Chemical Industry Co., Ltd. (TSE:5013)	Diversified Chemicals	Japan
2016	YES24 Inc. (KOSDAQ:A053280)	Internet and Direct Marketing Retail	South Korea
2016	Elica SpA (BIT:ELC)	Household Appliances	Italy
2016	Compagnie de Saint-Gobain S.A. (ENXTPA:SGO)	Building Products	France
2016	Thai Optical Group Public Company Limited (SET:TOG)	Healthcare Supplies	Thailand
2016	Marathon Oil Corporation (NYSE:MRO)	Oil and Gas Exploration and Production	United States
2016	Fuji Co., Ltd. (TSE:8278)	General Merchandise Stores	Japan
2016	Huron Consulting Group Inc. (NasdaqGS:HURN)	Research and Consulting Services	United States
2016	Nippon RAD Inc. (JASDAQ:4736)	Application Software	Japan
2016	Kolon Industries, Inc. (KOSE:A120110)	Commodity Chemicals	South Korea
2016	Pioneer Corporation (TSE:6773)	Consumer Electronics	Japan
2016	PRGX Global, Inc. (NasdaqGS:PRGX)	Data Processing and Outsourced Services	United States
2016	Daemyung Corporation Co.,Ltd. (KOSDAQ:A007720)	Electronic Equipment and Instruments	South Korea
2016	Wistron Corporation (TSEC:3231)	Technology Hardware, Storage and Peripherals	Taiwan
2016	Universal Cables Limited (BSE:504212)	Electrical Components and Equipment	India
2016	TAKE Solutions Limited (BSE:532890)	Systems Software	India

2016	Surteco Group SE (XTRA:SUR)	Home Furnishings	Germany
2016	The Weir Group PLC (LSE:WEIR)	Industrial Machinery	United Kingdom
2016	Tosoh Corporation (TSE:4042)	Commodity Chemicals	Japan
2016	Monami Co., Ltd. (KOSE:A005360)	Office Services and Supplies	South Korea
2016	Schneider Electric SE (ENXTPA:SU)	Electrical Components and Equipment	France
2016	The Warehouse Group Limited (NZSE:WHS)	General Merchandise Stores	New Zealand
2016	Toho Holdings Co., Ltd. (TSE:8129)	Healthcare Distributors	Japan
2016	Waseda Academy Co., Ltd. (TSE:4718)	Education Services	Japan
2016	BlueScope Steel Limited (ASX:BSL)	Steel	Australia
2016	PTT Global Chemical Public Company Limited (SET:PTTGC)	Commodity Chemicals	Thailand
2016	Nippon Telegraph and Telephone Corporation (TSE:9432)	Integrated Telecommunication Services	Japan
2016	Huvis Corporation (KOSE:A079980)	Textiles	South Korea
2016	Senior Solution S.A. (BOVESPA:SNLS3)	Application Software	Brazil
2016	Sonic Healthcare Limited (ASX:SHL)	Healthcare Services	Australia
2016	Nabaltec AG (XTRA:NTG)	Specialty Chemicals	Germany
2016	Ya-Man Ltd. (TSE:6630)	Personal Products	Japan
2016	France Bed Holdings Co. Ltd. (TSE:7840)	Home Furnishings	Japan
2016	Applus Services, S.A. (BME:APPS)	Research and Consulting Services	Spain
2016	Life Foods Co., Ltd. (JASDAQ:3065)	Restaurants	Japan
2016	Toyota Tsusho Corporation (TSE:8015)	Trading Companies and Distributors	Japan
2016	KNM Group Berhad (KLSE:KNM)	Oil and Gas Equipment and Services	Malaysia
2016	Public Joint-Stock Company Federal Hydro-Generating Company - RusHydro (MISX:HYDR)	Electric Utilities	Russia
2016	International Wire Group Holdings, Inc. (OTCPK:ITWG)	Electrical Components and Equipment	United States
2016	Merck & Co., Inc. (NYSE:MRK)	Pharmaceuticals	United States
2016	Zensho Holdings Co., Ltd. (TSE:7550)	Restaurants	Japan
2016	Thangamayil Jewellery Limited (NSEI:THANGAMAYL)	Specialty Stores	India
2016	Daiwabo Holdings Co., Ltd. (TSE:3107)	Technology Distributors	Japan
2016	Tecnoinvestimenti S.p.A. (BIT:TECN)	Research and Consulting Services	Italy
2016	GrainCorp. Ltd. (ASX:GNC)	Agricultural Products	Australia
2016	Allied Circuit Co., Ltd. (GTSM:8155)	Electronic Components	Taiwan
2016	Colabor Group Inc. (TSX:GCL)	Food Distributors	Canada
2016	Severfield plc (LSE:SFR)	Construction and Engineering	United Kingdom
2016	HanseYachts AG (DB:H9Y)	Leisure Products	Germany
2016	Cencosud S.A. (SNSE:CENCOSUD)	Hypermarkets and Super Centers	Chile
2016	Trais Co., Ltd. (KOSDAQ:A052290)	Systems Software	South Korea
2017	Primary Health Care Limited (ASX:PRY)	Healthcare Services	Australia
2017	Shirble Department Store Holdings (China) Limited (SEHK:312)	Department Stores	China
2017	Softing AG (XTRA:SYT)	Application Software	Germany
2017	Famous Dave's of America, Inc. (NasdaqGS:DAVE)	Restaurants	United States
2017	KTCS Corporation (KOSE:A058850)	Office Services and Supplies	South Korea
2017	Starrag Group Holding AG (SWX:STGN)	Industrial Machinery	Switzerland
2017	Visang Education Inc (KOSE:A100220)	Education Services	South Korea
2017	Welspun Corp Limited (BSE:532144)	Steel	India
2017	Covenant Transportation Group, Inc. (NasdaqGS:CVTI)	Trucking	United States
2017	Orange (ENXTPA:ORA)	Integrated Telecommunication Services	France
2017	eForce Holdings Limited (SEHK:943)	Personal Products	Hong Kong
2017	DX (Group) plc (AIM:DX.)	Air Freight and Logistics	United Kingdom

2017	Wuxi Sunlit Science and Technology Company Limited (SEHK:1289)	Industrial Machinery	China
2017	Redflex Holdings Limited (ASX:RDF)	Electronic Equipment and Instruments	Australia
2017	Boom Logistics Limited (ASX:BOL)	Trading Companies and Distributors	Australia
2017	Perion Network Ltd. (NasdaqGS:PERI)	Internet Software and Services	Israel
2017	HolidayCheck Group AG (DB:HOC)	Internet Software and Services	Germany
2017	Bactiguard Holding AB (publ) (OM:BACTI B)	Healthcare Supplies	Sweden
2017	euromicron AG (XTRA:EUCA)	Communications Equipment	Germany
2017	Begbies Traynor Group plc (AIM:BEG)	Research and Consulting Services	United Kingdom
2017	K&S Corporation Limited (ASX:KSC)	Air Freight and Logistics	Australia
2017	Future Bright Holdings Ltd. (SEHK:703)	Restaurants	Hong Kong
2017	3i Infotech Limited (BSE:532628)	Systems Software	India
2017	The McClatchy Company (AMEX:MNI)	Publishing	United States
2017	Vivimed Labs Limited (BSE:532660)	Specialty Chemicals	India
2017	Triumph Group, Inc. (NYSE:TGI)	Aerospace and Defense	United States
2017	Evolving Systems, Inc. (NasdaqCM:EVOL)	Application Software	United States
2017	Bosideng International Holdings Limited (SEHK:3998)	Apparel, Accessories and Luxury Goods	Hong Kong
2017	TREVI - Finanziaria Industriale S.p.A. (BIT:TFI)	Construction and Engineering	Italy
2017	Austal Limited (ASX:ASB)	Aerospace and Defense	Australia
2017	Crocs, Inc. (NasdaqGS:CROX)	Footwear	United States
2017	Gokaldas Exports Limited (BSE:532630)	Apparel, Accessories and Luxury Goods	India
2017	Global Construction Services Limited (ASX:GCS)	Construction and Engineering	Australia
2017	Societe Tunisie Profiles Aluminium (BVMT:TPR)	Building Products	Tunisia
2017	Groupe Pizzorno Environnement (ENXTPA:GPE)	Environmental and Facilities Services	France
2017	Barnes & Noble, Inc. (NYSE:BKS)	Specialty Stores	United States
2017	TrueBlue, Inc. (NYSE:TBI)	Human Resource and Employment Services	United States
2017	Sungchang Autotech Co., Ltd. (KOSDAQ:A080470)	Auto Parts and Equipment	South Korea
2017	Vard Holdings Limited (SGX:MS7)	Construction Machinery and Heavy Trucks	Norway
2017	Meggitt PLC (LSE:MGGT)	Aerospace and Defense	United Kingdom
2017	Beijing Jingneng Clean Energy Co., Limited (SEHK:579)	Independent Power Producers and Energy Traders	China
2017	Euronav NV (ENXTBR:EURN)	Oil and Gas Storage and Transportation	Belgium
2017	Sumol+Compal, S.A. (ENXTLS:SUCO)	Soft Drinks	Portugal
2017	Flexituff International Limited (NSEI:FLEXITUFF)	Paper Packaging	India
2017	Talkweb Information System Co.,Ltd. (SZSE:002261)	Application Software	China
2017	Downer EDI Limited (ASX:DOW)	Diversified Support Services	Australia
2017	Diodes Incorporated (NasdaqGS:DIOD)	Semiconductors	United States
2017	Nabaltec AG (XTRA:NTG)	Specialty Chemicals	Germany
2017	Emmis Communications Corporation (NasdaqGS:EMMS)	Broadcasting	United States
2017	Datang International Power Generation Co., Ltd. (SEHK:991)	Independent Power Producers and Energy Traders	China
2017	Finsbury Food Group plc (AIM:FIF)	Packaged Foods and Meats	United Kingdom
2017	Hindalco Industries Ltd. (BSE:500440)	Aluminum	India
2017	Retail Food Group Limited (ASX:RFG)	Restaurants	Australia
2017	Hwajin Co., Ltd. (KOSDAQ:A134780)	Auto Parts and Equipment	South Korea
2017	Rejlers AB (publ) (OM:REJL B)	Research and Consulting Services	Sweden
2017	Scout24 AG (DB:G24)	Internet Software and Services	Germany
2017	Tribhovandas Bhimji Zaveri Limited (BSE:534369)	Specialty Stores	India
2017	Aspo Oyj (HLSE:ASPO)	Diversified Support Services	Finland
2017	Windstream Holdings, Inc. (NasdaqGS:WIN)	Integrated Telecommunication Services	United States

2017	R.R. Donnelley & Sons Company (NYSE:RRD)	Commercial Printing	United States
2017	Nielsen Holdings plc (NYSE:NLSN)	Research and Consulting Services	United States
2017	SeaWorld Entertainment, Inc. (NYSE:SEAS)	Leisure Facilities	United States
2017	Jiangsu Yabang Dyestuff Co., Ltd. (SHSE:603188)	Specialty Chemicals	China
2017	TEGNA Inc. (NYSE:TGNA)	Broadcasting	United States
2017	HSIL Limited (BSE:500187)	Metal and Glass Containers	India
2017	Vitec Software Group AB (OM:VIT B)	Application Software	Sweden
2017	B Communications Ltd (TASE:BCOM)	Integrated Telecommunication Services	Israel
2017	Qol Co., Ltd. (TSE:3034)	Drug Retail	Japan
2017	Xuchang Yuandong Drive Shaft Co., Ltd. (SZSE:002406)	Auto Parts and Equipment	China
2017	SDL plc (LSE:SDL)	Application Software	United Kingdom
2017	Cloetta AB (publ) (OM:CLA B)	Packaged Foods and Meats	Sweden
2017	Atento S.A. (NYSE:ATTO)	Office Services and Supplies	Luxembourg
2017	ORIOR AG (SWX:ORON)	Packaged Foods and Meats	Switzerland
2017	LT Foods Limited (BSE:532783)	Packaged Foods and Meats	India
2017	Guangzhou Grandbuy Co., Ltd. (SZSE:002187)	Department Stores	China
2017	Ercros, S.A. (BME:ECR)	Commodity Chemicals	Spain
2017	Gage Roads Brewing Co. Limited (ASX:GRB)	Brewers	Australia
2017	Overseas Shipholding Group, Inc. (NYSE:OSG)	Oil and Gas Storage and Transportation	United States
2017	Luyang Energy-Saving Materials Co., Ltd. (SZSE:002088)	Commodity Chemicals	China
2017	Applus Services, S.A. (BME:APPS)	Research and Consulting Services	Spain
2017	Renrenle Commercial Group Co., Ltd. (SZSE:002336)	Food Retail	China