FTSE 100 Corporate Values Analysis

Executive Summary:

An article entitled "Hands up if you can say what your company's values are" ran in the *Financial Times* on October 4, 2015.[1] This article concludes that FTSE 100 companies that do not list their corporate values on their websites have significantly outperformed companies that discuss values on their websites. This result compelled us to take a look for ourselves. Our analysis indicates that there is a very high likelihood that their result is actually a very interesting example of a false positive, i.e. the result is likely due to a random statistical fluctuation.

Analysis:

We obtained a list of the companies that comprise the FTSE 100 Index as of mid-December 2015 from the London Stock Exchange website.[2] Using this list, we created a database that contains a number of attributes for each company, including whether or not values appeared on the company's website, sector classification, stock ticker and predominant color of the company's logo.

We found 23 companies that fail to discuss corporate values.[3] We created three indices from FTSE 100 data using total return data going back five years.

- The "NoValues" Index is an equal weighted total return index of the 23 companies that did not list corporate values on their websites.
- The "Values" Index is an equal weighted total return index of the 77 companies that list their corporate values on their websites.
- The "FTSE 100 Proxy" Index is an equal weighted total return index of all 100 companies. Note that there are 101 stock tickers in the index because Royal Dutch Shell is a dual listed company.

Figure 1 shows the cumulative return of these three indices. Consistent with the FT result, we found that the "NoValues" Index beat the "FTSE 100 Proxy" Index and the "Values" Index by a wide margin. As we will see however, it is unlikely that this corporate governance factor is the proximate cause of the result.

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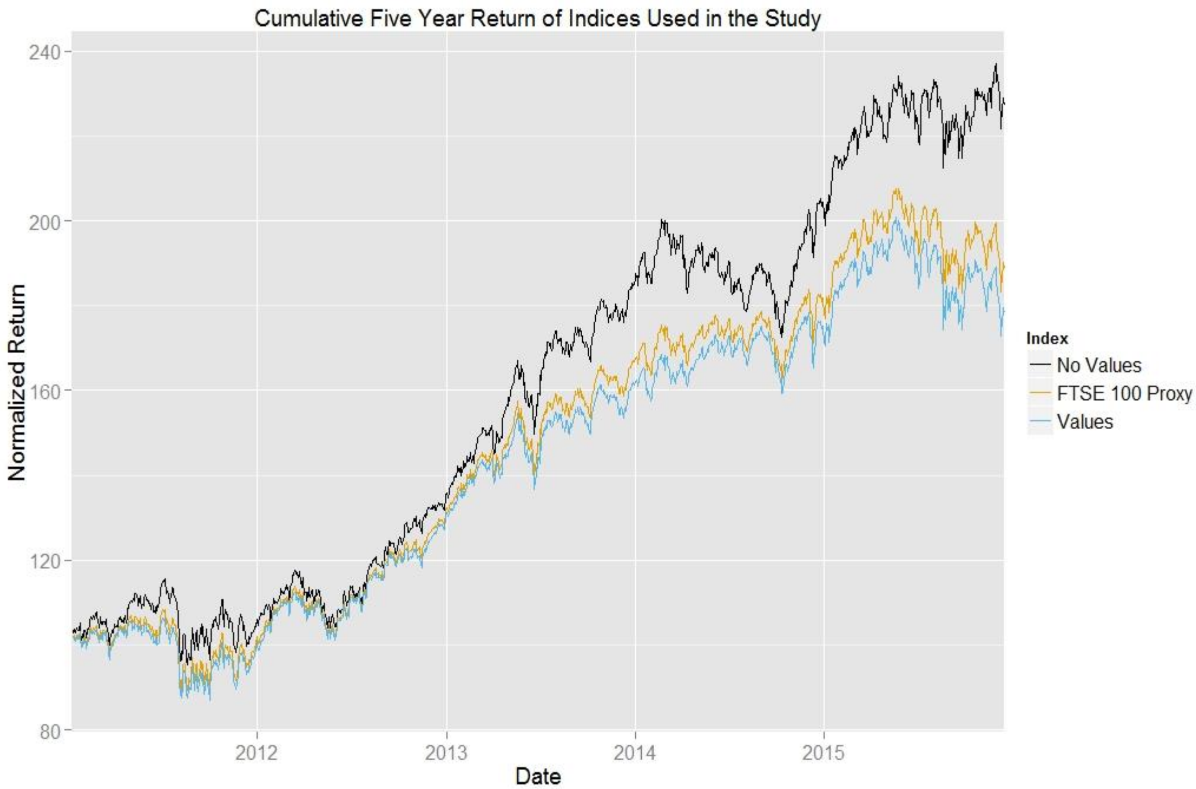
[1] http://www.ft.com/intl/cms/s/0/d508d08e-682d-11e5-a57f-21b88f7d973f.html

[2] http://www.londonstockexchange.com/exchange/prices-and-markets/stocks/indices/summary/summary-indices-constituents.html?index=UKX

[3] The *Financial Times* article found 17 companies. Unfortunately, the article does not list the 17 companies.

Figure 1: Cumulative return of the three indices in the study

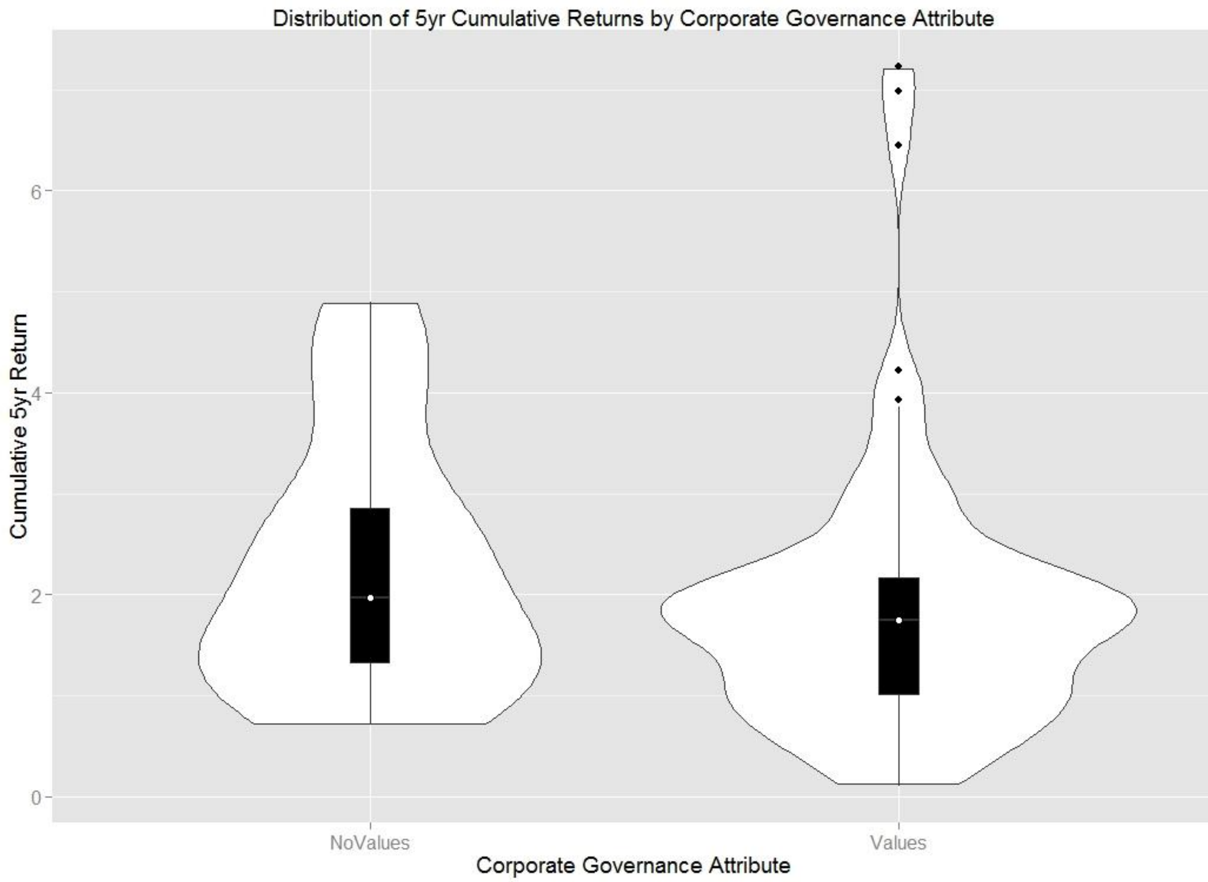


At this point in the analysis, we focused on two questions:

- What factors are significant, and in particular, is the corporate governance factor ("Values" / "NoValues") important? It turns out that sector was the only statistically significant factor we found; corporate governance was insignificant.
- What is the probability that we would obtain the observed "NoValues" five-year cumulative return by selecting 23 random stocks out of our pool of 101 stocks? The answer is there is a 1 in 5 chance of obtaining the result due to random chance.

The first question, what factors, if any, are significant, is easy enough to answer via an ANOVA factor analysis where we have not assumed normally distributed return data. We found significant p-values only for sector; all other factors were insignificant, including the corporate governance factor of "Values" / "NoValues". We included a corporate logo color factor as a control to definitively demonstrate that a company attribute that should have no influence on five year cumulative returns was indeed found to be insignificant by our ANOVA factor test. Figure 2 shows the distribution of cumulative returns by corporate governance factor. Clearly, the returns are not normally distributed. Additionally, the thin statistics of the "NoValues" group return distribution are obvious. This point is important because one might be tempted to argue that insignificant corporate governance p-values are being driven by the outliers in the "Values" group, denoted by the circular points in the plot. The "NoValues" group contains no outliers despite the large range in values because there are so few data points clustering around the median of the distribution. In any event, the corporate governance factor is still found to be insignificant after removing the outliers from the "Values" group.

Figure 2: Five-year cumulative return distribution by corporate governance factor



The second question, how likely is it that this result is random, is a bit trickier to answer. We wrote a simple Monte Carlo simulation that creates an index comprised of 23 randomly selected stock tickers and calculates the cumulative return of this index, repeating this process thousands of times. This approach found that there is an 8% chance that the outperformance of the "NoValues" Index is due to random chance. This result is misleading, however.

The validity of this simple Monte Carlo analysis hinges on the fact that the sector and corporate governance attributes are assumed to be independent of one another. An examination of the distribution of sectors in the FTSE 100 Proxy stocks and in that of the "NoValues" group clearly demonstrate that selecting for "NoValues" preferentially selects (and rejects) some sectors over others, see Table 1. There is only a 2% chance that you would obtain a Services Sector weighting of approximately 50% when randomly selecting 23 stocks from the FTSE 100 Proxy universe.[4] In other words, when you select for corporate governance you are actually selecting for sector, which the previous ANOVA analysis has shown to be significant. As a result, any Monte Carlo analysis must mimic the sector composition of the "NoValues" Index.

Table 1: Sector composition of the "FTSE 100 Proxy", "Values" and "NoValues" Indices.

Sector	FTSE 100 Proxy	Values	NoValues
Services	27%	21%	48%
Financial	23%	23%	22%
Industrial Goods	12%	13%	9%
Basic Materials	12%	14%	4%
Consumer Goods	11%	13%	4%
Healthcare	6%	6%	4%
Utilities	5%	6%	0%
Technology	5%	4%	9%
All	100%	100%	100%

The results of a Monte Carlo analysis that selects 23 stocks while maintaining the observed sector composition of the "NoValues" group indicate that there is a 20% chance that you would obtain the observed "NoValues" cumulative return in a random draw. In other words, there is a 1 in 5 chance that the outperformance of the "NoValues" Index is due to random chance, and this outperformance is due to the sector composition, not to the corporate governance attribute.

Closing Remarks:

An explicit assessment of corporate governance, environmental and social attributes of companies is widely considered to be an important component of an institutional caliber investment process. We found the *Financial Times* article's contrary result to be a potentially strong argument that an explicit consideration of corporate values might be counterproductive. While we haven't answered the "Is it worth it?" question, we have at least determined that the *Financial Times'* surprising result is not due to corporate governance factors but rather to

[4] There is a 36% chance that you would obtain a Services Sector weighting consistent with the FTSE 100 Proxy universe weight of approximately 30% when randomly selecting 23 stocks.

sector selection and, furthermore, has a very high chance of being due to random luck, i.e. you cannot rule out random chance beyond the 80% confidence level. Woodsdale Group is happy to assist with setting up and evaluating corporate governance ranking methodologies, as well as in many other areas, including evaluating the effectiveness of hedges, measuring analyst and PM performance and quantitatively measuring liquidity and the market impact of trading. Please visit woodsdale.com for more information.

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Data/Software Acknowledgement:

Data sources include London Stock Exchange and Yahoo Finance. Software used include R x64 3.2 with the ggplot2 package.